

Coexistence and Reconciliation: An Illustrated  
Exploration of Interrelationship Between Community  
and Disability, in New Delhi, India

A Creative Project

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By

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## **ABSTRACT**

**CREATIVE PROJECT:** Coexistence and Reconciliation: An Illustrated Exploration of Interrelationship Between Community and Disability, in New Delhi, India

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The project intends to explore how persons with ambulatory disabilities engage, relate, and identify themselves within the built and social environment of two neighborhoods of New Delhi, India. Employing inclusion lens and disability focus, it seeks to understand the interrelationship between the two communities and disability, from perspective of the residents of the neighborhood who have ambulatory disability. The project also examines various factors influencing the process of disablement and empowerment of participants in a community (e.g. social, physical, economic, and legal causes). Participants include persons who use mobility aid (wheelchair, walker, crutches, prosthetic legs, walking stick, etc.). The creative project is developed on the basis of first principles approach using ethnographic and charrette graphic methods, applied to Ramesh Nagar and Mansarovar Garden communities in New Delhi, India.

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# Chapter-1

## Introduction

Addlakha (2013) highlights:

Disability only becomes a tragedy for me when the society fails to provide the things we need to lead our lives-job opportunities or barrier-free buildings, for example. It is not a tragedy to me that I'm living in a wheelchair. (p.61)

This project aims to focus on exploring the interrelationship between community and disability as well as understanding the role of community members in acknowledging various disability needs. The study is limited to persons with ambulatory disability who reside and/or work and/or study in New Delhi (Figure 1-1 and 1-2). Ambulatory disability is a physical and permanent disability to such a degree that the person is unable to move from place to place without the mobility aid (oregonlaws.org, 2017). As per Census 2011, there are 27 million persons with disabilities in India, out of which 8.2 million are in urban areas. As per UN estimate, 10% of the population in developing countries has a disability, which is about 120 million persons with disabilities in India. Out of India's largest cities, the largest concentration of disabled persons may be found in New Delhi. In Delhi, total population of persons with disabilities is around 0.23 million, where urban population is 0.22 million with 29% having disability in movement (Census of India, 2001).



Figure 1-1 Location map of India (wikimedia, 2010)



Figure 1-2 Location map of Delhi (wikimedia, 2014)

## 1.1 Background Study

As defined by Accessibility for the Disabled (2004):

A disability refers to a physical, sensory or mental limitation that interferes with a person's ability to move, see, hear or learn; a handicap refers to a condition or barrier imposed by the environment, society or oneself.

Convention on the Rights of Persons with Disabilities (2004) states that:

Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.

This study concentrates on the diverse ways in which urban neighborhood, particularly their physical layouts respond to disabilities and the accommodations they provide.

Disability studies does not regard disability as a problem but as a location or position for gaining valid knowledge and understanding (Addlakha, ed., 2013). I too begin with an open mind and not within the duality that the disabled people are "disabled" and have needs that able people can provide. Instead of determining how persons with ambulatory disability perform within social and built environment of Ramesh Nagar and Mansarovar Garden neighborhoods (Figure 1-3, and 1-4), in this study relationship between disability and community is an opportunity. Chapter 5 and Chapter 7 will discuss the relationship between disability and community in detail, whereas, Chapter 6 will describe the physical setting of two neighborhoods in detail (Figure 1-3 and 1-4).

We are all physically disabled at some time in our lives. Addlakha (2013), states that “indeed, disability is over time a common fate of all bodies, and not just impaired bodies. In the ultimate analysis, is not each one of us only temporarily able-bodied?” A child, a person with a broken leg, a parent with a pram, an elderly person, are all disabled in one way or another. Only a few people remain healthy and able-bodied all their lives.

It is generally understood that the built environment should be barrier free and everyone should be able to adapt it to fulfill their needs. Hence the designers and builders need to pay attention to the fact that almost everyone is disabled in some way. As such, planning for the majority implies planning for people with varying abilities and disabilities (Accessibility for the Disabled, 2004).



Not to scale(N.T.S)

Figure 1-3 Location map of Mansarovar Garden  
Map by Author, modified from Google

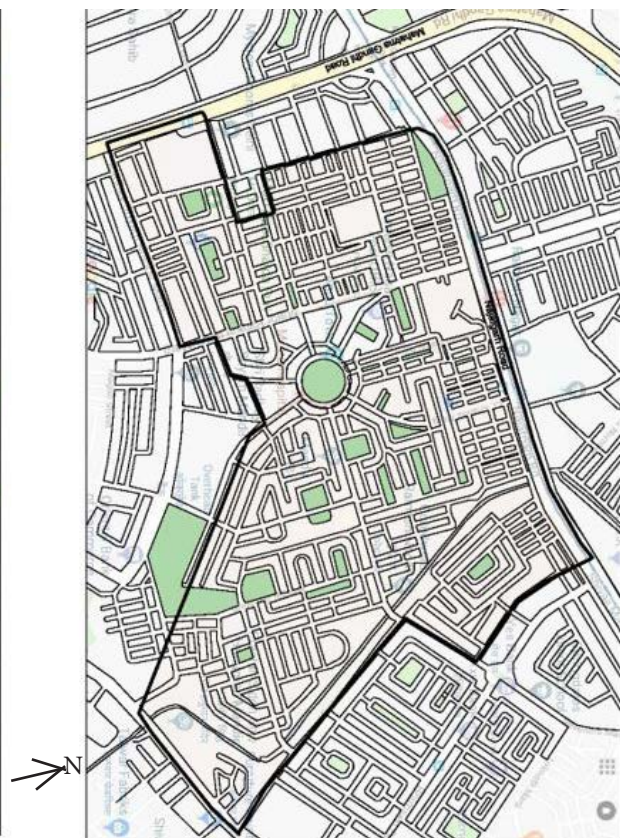


Image N.T.S

Figure 1-4 Location map of Ramesh Nagar  
Map by Author, modified from Google

The research focuses on persons with ambulatory disabilities who use mobility aid such as wheelchair, walker, crutches, prosthetic legs, and walking stick. From the perspective of the residents of the neighborhoods who have ambulatory disability, the author seeks to understand the interrelationship between the communities and disability. The author through this project, also examines different factors causing disablement and empowerment of persons with ambulatory disability in a community for e.g. social, physical, economic, and legal factors. The creative project is developed entirely on the basis of the first principles approach, using ethnographic and charrette graphic methods, applied in Ramesh Nagar and Mansarovar Garden communities in New Delhi, India.

In the last decade (2010) access for disabled people to public buildings and facilities in cities has become an important part of political agenda, and many authorities internationally are promoting strategies for accessible built environments (Imrie, R, 1996). UN convention on rights of persons with disabilities (UNCRPD) mentions full and effective participation of persons with disabilities. As a matter of fact, the needs of the disabled coincide with the needs of the majority, and all people are at ease with them. Environments – physical, social, and attitudinal – can either disable people with impairments or foster their participation and inclusion in life activities. Through this creative project, author attempts to analyze those factors that contribute to disablement as well as empowering participants in their daily routines. The project will also discuss in details about the physical, social and attitudinal

environments and their role in participants' lives.

Physical or built environment refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities that can often include their supporting infrastructure, such as water supply, or energy networks. It encompasses places and spaces created or modified by people including buildings, parks, and transportation systems. Furthermore, it is a material, spatial and cultural product of human labor that combines physical elements and energy in forms for living, working and playing (Armaghani, 2015).

Social environment encompasses the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact. (Barnett & Casper, 2001)

Attitudinal environment here means the attitude of people who live in the same social and physical setting, towards disability and persons with disability. The International Classification of Functioning, Disability and Health (ICF), defines participation as involvement in life situations and environmental factors as the social, attitudinal and physical environments in which people live. When these factors have a positive influence on an individual's participation they are called facilitators and, when a negative influence, barriers (Lawlor, Mihaylov, Welsh, Jarvis & Colver, 2006).



The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) stipulates the importance of interventions to improve access to different domains of the environment including buildings, roads, transportation, information and communication. These domains are interconnected – people with disabilities will not be able to benefit fully from improvements in one domain if the others remain inaccessible (WHO, 2011).

Through this project the author is able to address the following research question:

*How does coexistence of disability understood within the Ramesh Nagar and Mansarovar Garden neighborhoods and what factors help in reconciliation between disability and the neighborhoods?*

## **1.2 Sub-questions**

In addressing the coexistence of disability and the community, ethnographic methods are applied to get detailed account of disability experience within the communities. To further study the coexistence and reconciliation of disability and community, the following research questions were addressed:

- 1) What do the persons with ambulatory disabilities (PwADs) consider as barriers within the community?
- 2) What are the factors that create disabling and empowering situations for PwADs in a community?
- 3) What are the aspirations of PwADs and what prevents them to achieve those?
- 4) How can a community could create an enabling environment for PwADs?

## Chapter-2

### Literature Review

#### 2.1 Understanding Disability

Disability can cause poverty by preventing the full participation of disabled people in the economic and social life of their communities (World Bank, 2011)

In order to understand the concept of disability, the terms associated with persons with disabilities, like accessibility, barrier free environment, inclusion, social justice, universal accessible design, visible/invisible barriers and the like are also needed to be studied.

Addlakha (2013) mentions that postmodernist and poststructuralist disability readers' perspectives, largely influenced by the work of Michel Foucault and Jacques Derrida, look at disability through the categories of power/ knowledge, social construction and individual agency. For disability studies questions not only the hegemony of the norm but configures it more as an ideological construct than as an actual condition of embodiment (Addlakha,ed.,2013)

According to the World Health Organization (2001), disability has three dimensions:

1. Impairment in a person's body structure or function, or mental functioning; examples of impairments include loss of a limb, loss of vision or memory loss.
2. Activity limitation, such as difficulty in seeing, hearing, walking, or

problem solving.

3. Participation restrictions in normal daily activities, such as working, engaging in social and recreational activities, and obtaining health care and preventive services.

Disabilities is an umbrella term, covering impairments, activity limitations, and participation restrictions. Thus, disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives (WHO, 1980).

The Preamble to the UN Convention on Rights for Persons with disabilities (UNCRPD) states that disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others. It also emphasizes that persons with disabilities include those who have long term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others. Both the expressions reflect a shift from a medical model to social model of disability (Manual on Disability Statistics, 2012).

## **2.2 Different models of disability**

There are various models of disability but the most prevalent of them are medical model and social model. The Indian Ministry of Statistics and Program Implementation (2011) explains the two models as:



Medical Model of Disability-in the medical model, individuals with certain physical, intellectual, psychological and mental conditions (impairment) are regarded as pathologic or abnormal; it is simply the abnormality conditions themselves that are the cause of all restrictions of activities. Accordingly, disability lies in the individuals, as it is equated with those restrictions of activity. Faced with the line of thinking, individuals would feel pressured to work on their restrictions, bearing the burden of adjusting to their environment through cures, treatment or rehabilitation.

Social Model- The social model was developed by a group of British social scientists with a strong socialist agenda, which is reflected in its Marxian and materialist perspective. They linked the systematic oppression of disabled people to the rise of industrial capitalism, which created a market where those who could not sell their labor power were devalued and stigmatized (Addlakha,ed.,2013)

Addlakha (2013) also states that:

The social model of disability asserts that material barriers, social prejudice and exclusion define who is disabled and who is not in a particular society. While some people have physical, intellectual, or psychological differences from a statistical norm, these impairments do not have to lead to disability unless society fails to accommodate and include them in the way it would those who are 'normal.' While

social model does not reject medical knowledge and technology in dealing with the problem of bodily impairment, it shifts the spotlight of research and advocacy to analyzing how society disables its impaired members. Consequently, the focus of inquiry and intervention is on how physical, social, economic, political, communication and attitudinal barriers create disabling environments that lead to the oppression of disabled persons. (p.5)

The social model shifts the focus to the society; undue restrictions on behavior of persons with impairment are seen to be imposed by ("Major Concepts and Definition," n.d.):

- a) dominant social, political, and economics ideologies;
- b) cultural and religious perceptions regarding persons with disabilities;
- c) paternalism in social welfare systems;
- d) discriminations by society;
- e) the inaccessibility of the environment and information; and
- f) the lack of appropriate institutional and social arrangements.

Thus, in this model disability does not lie in individuals, but in the interactions between individuals and society. It locates the definition of disability at the most basic level of activity/participation in core domains – defined as the ability or inability to carry out basic actions at the level of whole person (i.e. walking, climbing stairs, lifting packages, seeing a friend across the room etc.)

## 2.3 Types of disability

Disability is a diverse category, encompassing different types of disabilities and is categorized by various institutions as follows:

WHO, distinguished disabilities in 26 categories as shown in the Figure 2-1

<b>Impairments (9)</b> (I Codes 10.0-99.9)	<b>Disabilities (9)</b> (D Codes 10.0-78.0)	<b>Handicaps (7)</b> (H Codes 1.0-7.9)
I 1 Intellectual	D 1 Behaviour	H 1 Orientation
I 2 Language	D 2 Communication	H 2 Physical Independence
I 3 Other psychological	D 3 Personal Care	H 3 Mobility
I 4 Aural	D 4 Locomotor	H 4 Occupation
I 5 Ocular	D 5 Body Disposition	H 5 Social Integration
I 6 Visceral	D 6 Dexterity	H 6 Economic Self-Sufficiency
I 7 Skeletal	D 7 Situational	H 7 Other
I 8 Disfiguring	D 8 Particular Skill	
I 9 Generalized, Sensory And Other	D 9 Other Activity Restrictions	

Figure 2-1 Types of Disabilities, WHO

(WHO, 2001)

The Persons with Disabilities Act (PWD Act, 1995), India, classifies seven types of disabilities namely:

- 1) Blindness;
- 2) Low vision;
- 3) Leprosy-cured;
- 4) Hearing impairment;
- 5) Loco motor disability (ambulatory disability);
- 6) Mental retardation and
- 7) Mental illness.

As per Census 1995, three categories of disability were stated in question during house-listing operations, namely; totally blind, totally dumb, and totally crippled. In 2001 disability was categorized in 5 types, namely; disability- in seeing, in movement, in speech, in hearing and in mental. Again in 2011, Census redefined the classifications into eight categories, namely:

- 1) In seeing;
- 2) In Hearing;
- 3) In Speech;
- 4) In Movement (ambulatory disability);
- 5) Mental Retardation;
- 6) Mental Illness;
- 7) Any Other and
- 8) Multiple Disability

This project focuses on persons with ambulatory disabilities or disability in movement.

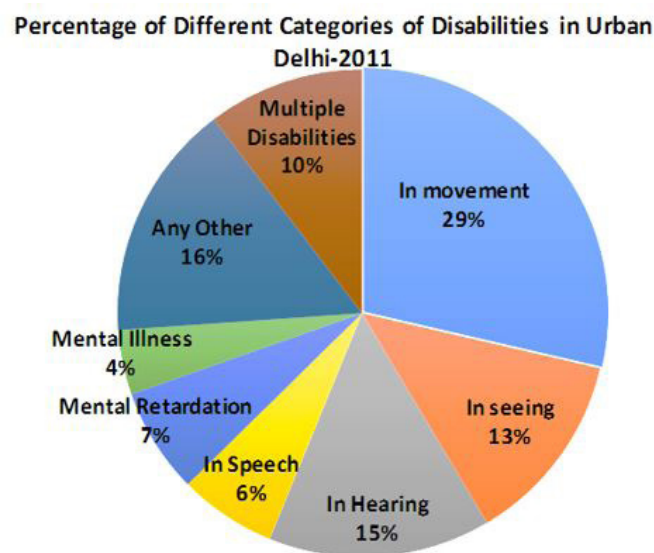


Figure 2-2 % Distribution of Types of Disabilities in Delhi

(Census, 2011)

As per Census of India, 2011 the total number of persons with disabilities in urban areas of Delhi are 228,352. Total number of persons with ambulatory disability or disability in movement in Delhi is maximum (65449).

The most affected age group with disabilities is between age of 20-40 years old, with males (61%) having prevalent disability in movement (28%). Females are seen to be most affected (49%) by disabilities in their old age (>60).

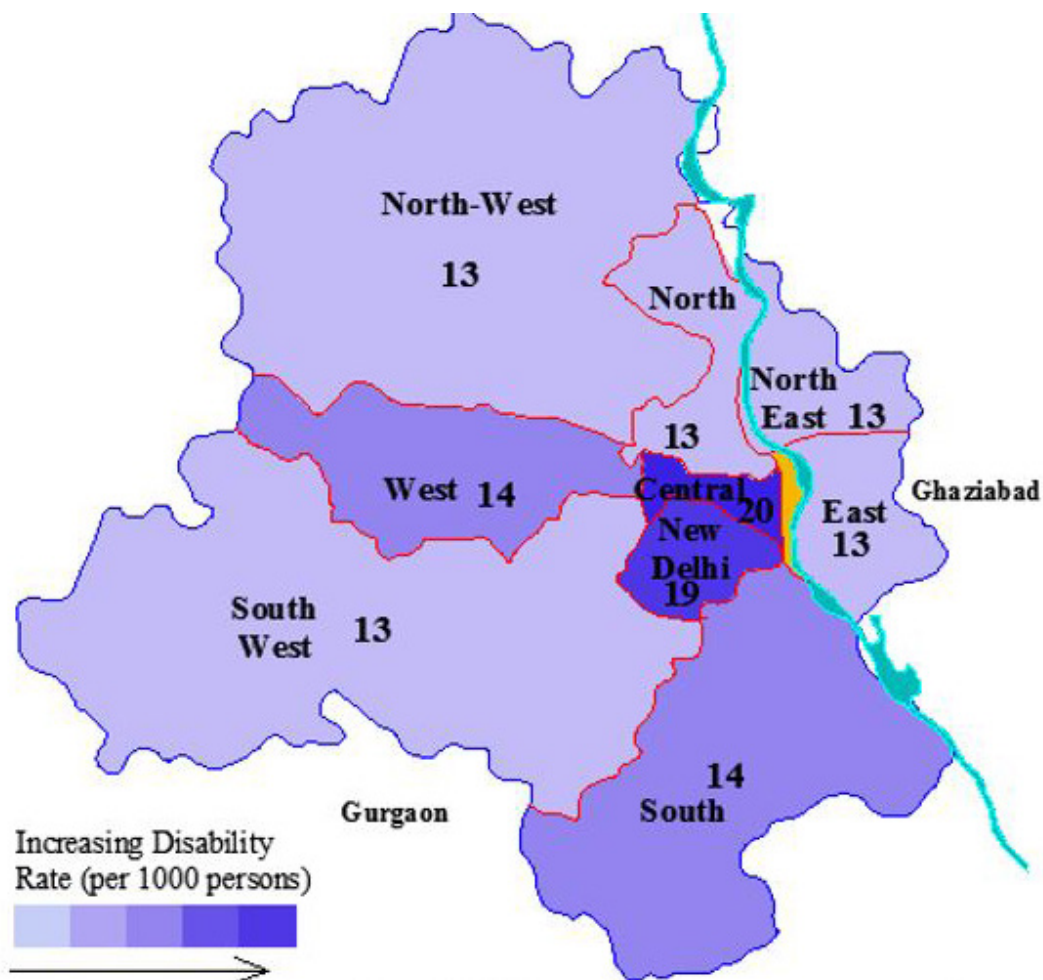


Figure 2-3 District wise Disability Rate (per 1000 persons) in Delhi, 2011

(Bhinder, 2014)

Disability rate is the ratio of total population by total population with disabilities per lakh (100,000) / thousand/ hundred population.

(Total population with disabilities/Total population) x 100,000 (per lakh population) or 1000 (per thousand population). As per Fig. 2-3, the disability

rate is maximum in Central Delhi and New Delhi, with 20 and 19 persons having disability per 1000 persons respectively. West and South Delhi have 14 persons with disabilities per thousand population in Delhi. Whereas North-West District, South-West and East District of Delhi are having minimum disability rate, 13 persons with disabilities per thousand population in Delhi.

The population density of persons with disability is maximum in North-East District of Delhi (567 persons/sq.km). West Delhi has **third most** prevalent density of persons with disabilities (277 persons/sq. km). It is minimum in the case of New Delhi and South –West Delhi with 73 and 78 respectively (Fig. 2-4).



Figure 2-4 District wise Density of PwDs per square kilometer, in Delhi

(Bhinder, 2014)

## **2.4 Concepts related to persons with disabilities**

### **2.4.1 Disability Inclusion**

Including people with disabilities in everyday activities and encouraging them to have roles similar to their peers who do not have a disability is disability inclusion. This involves more than simply encouraging people; it requires making sure that adequate policies and practices are in effect in a community or organization (Disability Inclusion, 2016).

Inclusion should lead to increased participation in socially expected life roles and activities—such as being a student, worker, friend, community member, patient, spouse, partner, or parent. Socially expected activities may also include engaging in social activities, using public resources such as transportation and libraries, moving about within communities, receiving adequate health care, having relationships, and enjoying other day-to-day activities (Disability Inclusion, 2016).

### **2.4.2 Community**

A community emerges as a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings. Community is defined similarly but experienced differently by people with diverse backgrounds (Mac Queen, et. al., 2001).

### **2.4.3 Barrier free environment**

Barrier Free Environment is one which enables people with disabilities to move about safely and freely and to use the facilities within the built



environment. The goal of barrier free design is to provide an environment that supports the independent functioning of individuals so that they can get to, and participate without assistance, in everyday activities such as procurement of goods and services, community living, employment, and leisure. The sketch in Fig. 2-5 represents the provision for barrier free environment in park (CPWD Guidelines, 1998).

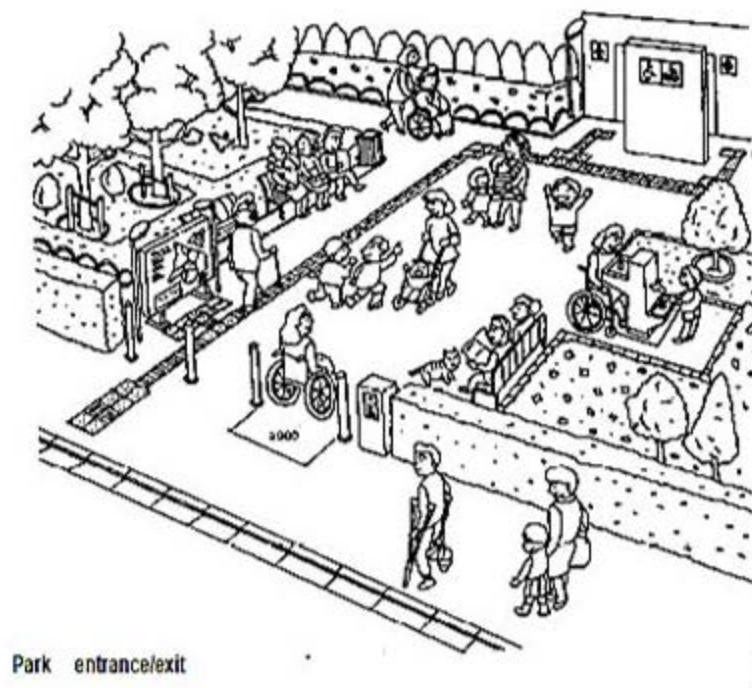


Figure 2-5 Sketch of Barrier Free Environment in park

( CPWD Guidelines, 1998, MoUD)

#### 2.4.4 Visible and invisible barrier

Any factor including attitudinal, communicational, cultural, economic, environmental, institutional, political, religious, social or structural factors which hampers the full and effective participation of persons with disabilities in society adds to visible and invisible barrier. However, this study tends to explore barriers experienced by participants in leading their every-day routine. Barriers to participation included uneven surfaces in the physical environment, increased dependence on adult supervision within the social



environment and bullying in the attitudinal environment (Barnett & Casper, 2001).

This project explores the visible and invisible barriers experienced by participants through interviews and direct observations.

#### **2.4.5 Discrimination**

Discrimination in relation to disability, means any distinction, exclusion, restriction on the basis of disability which is the purpose or effect of impairing or nullifying the recognition, enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field and includes all forms of discrimination and denial of reasonable accommodation (The Rights of Persons with Disabilities Act, 2016).

#### **2.4.6 Universal design**

The design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design (CPWD, 2001).

#### **2.4.7 Accessibility**

In Article 9 and 20 of the UNCRPD and Article 14, 19 and 21 of the Indian Constitution, it is recognized that persons with disabilities shall be provided such accessibility on an equal basis with others to the physical environment, transportation, information and communications, including appropriate technologies and systems, and other facilities and services open or provided to the public, both in urban and in rural areas.

#### **2.4.8 UN Convention for Rights of Persons with Disability (UNCRPD)**

The UN convention provides 50 articles on persons with disabilities that are needed to be incorporated in policies and acts within the country (that have ratified with UN convention).

The principles and articles of UN convention have been incorporated in the amendment of persons with disabilities act (1995). The article 1 discusses about the purpose of the convention, so as to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities and respect for their inherent dignity.

#### **2.4.9 Social cohesion and the neighborhood**

Social cohesion is about getting by and getting on at the more mundane level of everyday life. Neighborhood is likely to be the site for many of these mundane routines and for the ongoing repair work and normalization. The neighborhood has re-emerged as an important setting for many of the processes which supposedly shape social identity and life-chances. The rampant urbanization of this period was seen to be producing a social order in which the traditional ties of community- shared space, close kinship links, shared religious and moral values-were being replaced by anonymity, individualism and competition. A society lacking cohesion would be one which displayed social disorder and conflict, disparate moral values, extreme social inequality, low levels of social interaction between and within communities and low levels of place attachment (Forrest, R., & Kearns, A., 2001). This project attempts to highlight

the existing social cohesion within small communities and its impact on persons with ambulatory disabilities.

#### **2.4.10 Social Justice**

As per D. Srivastav, in order to understand justice, it is very necessary to understand what injustice is and how to mitigate it. Justice is an active process, a decisional process which helps one to bar a course which is wrong, by experiencing injustice a person tries to bring justice by rectification of that injustice or at least by devising methods through which that injustice could further be prevented (Srivastav, 2016).

Rawls, attempts to a theory of justice by proposing a new social contract theory, he construed the notion of justice in terms of maximization of liberty, equality and opportunity as the central theme seeing justice in the light of fairness. Amartya Sen contradicts Rawlsian concept of justice. Sen argues that the basic problem associated with Rawls concept of justice is that, it also rests on some pre requisites as the earlier theories of social contract, i.e., on a perfect arrangement, such perfect arrangement is simply impossible as the plurality of opinions will never allow any arrangement to become perfect, therefore, in absence of such a perfect arrangement the concept of justice as such may never fructify, it is, therefore, necessary to understand the 'idea of justice' first and then to approach towards the 'concept of justice' subsequently. Sen continues by stating that the aim should be to mitigate injustice and justice shall automatically advance, unfurl and bloom (Srivastav, D., 2016).

David Harvey states that

social justice is a particular application of just principles to conflicts which arise out of necessity for social cooperation in seeking individual advancement. The principle of social justice therefore applies to the division of benefits and the allocation of burdens arising out of the process of undertaking joint labor. The principle also relates to the social and institutional arrangements associated with the activity of production and distribution (Harvey, D., 1988).

The Marxist's view of social justice believes that the idea of justice has developed through the ages. It changes from one age to the other on the basis of economic relations. The economic structure plays decisive role in establishing and maintaining the social justice. There has been continuous struggle between the haves and have nots throughout the ages in the pretext of social justice, as in every stage of human society the have nots were exploited by the have class but could not attain such justice as the problem of exploitation is rooted in the economic structure itself (Social Justice: 7 Theories of Social Justice – Explained, 2017).

This study will focus on how social cooperation helps in bringing social justice to those who are marginalized by the physical/ social environment and institutional system.

People with disabilities experience forms of social and institutional injustice on a daily basis, which are antithetical to a just society. For Young, oppression is injustice and justice, refers to the institutional conditions necessary for the development and exercise of individual capacities and collective communication and cooperation (Imrie, 1996).

Young's first category, exploitation, is closely aligned to the neo-Marxian idea that oppression occurs through transferring the results of labor of one social group to benefit another. A common feature of experiences of people with disabilities, is their exclusion from the labor market, but where inclusions do occur they tend to consign disabled people to low paid, low waged, unskilled occupations. Young's second category of oppression is the marginalization of disabled people. Young argues, the classical (Marxian) definition of 'marginals' are people whom the system of labor cannot or will not use (Imrie, 1996).

The literature review explains the concepts of disability and concepts associated with disability in detail. The project discusses the above mentioned through surveys and participant observations. Ethnographic approach and charrette graphics techniques were used in the project.

Chapter 3 describes the methodology of how the project is carried out and what different methods are used in the project to perform surveys and participation observations. Chapter 4 discusses the planning initiatives done by the government for persons with disabilities in India.

## Chapter-3

### Methodology

The project involves both qualitative and quantitative methods of research. Qualitative methods include ethnographic methods of taking field notes, visual methods of taking field notes, participant observations; whereas quantitative methods include structured/unstructured interviews, mapping among others (Fig. 3-1).

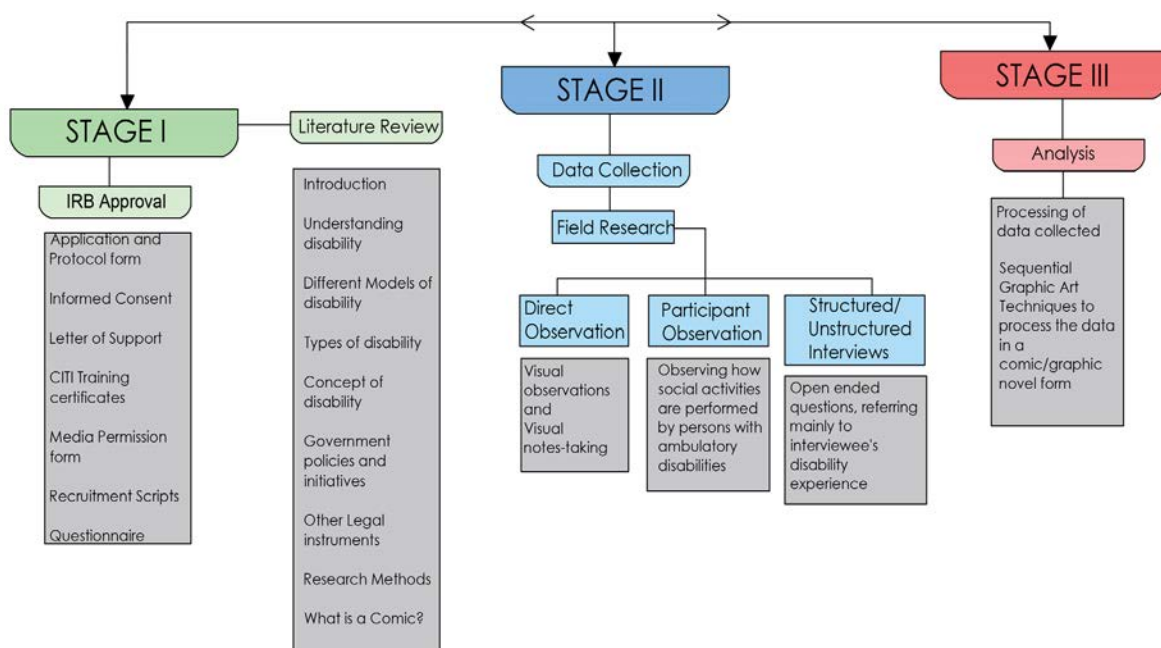


Figure3-1 Methodology

( Author, 2018)

The methodology is structured in three broad yet interconnected stages. Stage I involves literature research and IRB approval procedure; stage II involves data collection based on field research and stage III includes the analysis of data collected, both qualitative and quantitative.

The research initiated with IRB (Institutional Review Board) permission and literature review on concepts of disability. It was followed by research on relationship between urban environment and disability as well as thorough study of the case study areas in New Delhi, India. The research explained the existing knowledge on various urban environments (physical, social and attitudinal) and different terms associated with disability, like, accessibility, barrier free environment, inclusion, social justice, visible/invisible barriers, among others. The literature review formed a foundation for this creative project, however, field research and personal interviews shaped the design for this project.

In the process of data collection and field research, direct observations, participant observations, visual note taking and interviews were carried out. Author worked in New Delhi, India in general and two small communities namely, Ramesh Nagar and Mansarovar Garden, specifically. The various activities were studied in the two communities at different times of the day on the same street. Author also examined the condition of roads and sidewalks and accessibility to different neighborhood spaces, like, parks. For the project, persons with different ambulatory disabilities were interviewed and their stories of how they acquired disability were recorded.

With some participants, the author was involved in their daily activities to have a better understanding of how differently they use spaces and engage

in their daily routines. This led to an ethnography research and provided an insightful immersive fieldwork. Author used a camera to record the observations for the purpose of developing sketches of the two communities and participants. Also, interview questionnaires and a notebook to note down the various details of activities performed by the participants were used.

Analysis and coexistence and reconciliation is the last but not the end of this project, rather is a beginning. It is one of the most difficult stage as to analyze the ethnographic research and open-ended questions, requires a thorough understanding. Author have attempted to analyze the data keeping the interpretations of respondents in mind and in the work. The coexistence and reconciliation part display the sketches of persons with disabilities and shows how they engage within their community.

The various research methods used in this creative project are discussed below:

### **3.1 Phenomenological Research**

Phenomenological research is a design inquiry coming from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by participants (Creswell, J., 2014). Here, in this project, lived experiences of individuals about disability as described by persons with ambulatory disability is studied. This description culminates in the essence of the experiences for several individuals



who have all experienced the phenomenon (disability).

Any manner in which participants can describe their lived phenomenal experience can be used to gather data in a phenomenological study.

Although the most common means of data collection in a phenomenological study is through in-depth interviews to gather participants' detailed descriptions of their experience, participants' written or oral self-reports, or even their aesthetic expressions (e.g. art, narratives, or poetry) can also be evaluated (Simon, M., & Goes, J., 2011).

Moustakas viewed experience and behavior as an integrated and inseparable relationship of a phenomenon with the person experiencing the phenomenon. There are strong links between phenomenology and constructivism, which is considered with how the world appears to a particular person based on their personal views and experience.

### **3.2 Heuristic research**

Heuristic research begins with a personal question or challenge, but one that has a social or universal significance. It is aimed at discovery through self-inquiry and dialogue. The life experience of the heuristic researcher and the research participants is not a text to be interpreted but a full story that is vividly portrayed and further elucidated through art and personal documentations. From this material then develops a creative synthesis (Moustakas, C., 1994).

Moustakas (1994) described a heuristic process in phenomenological analysis that includes (Simon, M., & Goes, J., 2011)

- Immersion: the researcher is involved in the world of the experience
- Incubation: a space for awareness, intuitive or tacit insights, and understanding
- Illumination: active knowing process to expand the understanding of the experience
- Explication: reflective actions
- Creative synthesis: bringing together to show the patterns and relationships

### **3.3 Field notes in Ethnographic Research**

Ethnography involves extensive fieldwork and may be pursued in a variety of social settings that allow for direct observations of the activities of the group being studied, communications and interactions with the people, and opportunities for informal and formal interviews. Ethnographic studies have been conducted from anthropological, sociological and psychological perspectives or frameworks.

Ethnographic field research involves the study of groups and people as they go about their everyday lives. Carrying out such research involves two distinct activities. First, the ethnographer enters into a social setting and gets to know the people involved in it.

The ethnographer participates in the daily routines of this setting, develops ongoing relations with the people in it, and observes all the while what is going on. Indeed, the term participant observation is often used to characterize this basic research approach. But, the second part, involves creating of an accumulating written record of the observations and experiences.

Ethnography is a design of inquiry coming from anthropology and sociology in which the researcher studies the shared patterns of behaviors, language, and actions of an intact cultural group in a natural setting over a prolonged period of time. Data collection often involves observations and interviews (Creswell, 2014).

Ethnographers are committed to going out and getting close to the activities and everyday experiences of participants. The ethnographer seeks a deeper immersion in their worlds in order to grasp what they experience as meaningful and important. With immersion, the field researcher sees from the inside how people lead their lives, how they carry out their daily rounds of activities, what they find meaningful, and how they do so. In this way immersion gives the fieldworker access to the fluidity of others' lives and enhances his/her sensitivity to interaction and process (Emerson, Fretz & Shaw, 1995).

Through participation, the field researcher sees first-hand and up close how people grapple with uncertainty and confusion, how meanings emerge through talk and collective action, how understandings and interpretations

change over time. In all these ways, the fieldworker's closeness to others' daily lives and activities heightens sensitivity to social life as process (Emerson, Fretz & Shaw, 1995). Such participation provides deep immersion-and the sense of place that enables the ethnographer to inscribe the detailed, context-sensitive, and locally informed fieldnotes that Geertz (1973) terms "thick description."

Strategies for taking field notes (Emerson, Fretz & Shaw, 1995):

- Look for key words in observing interactions and in recording comments of participants
- Concentrate on opening and closing statements; make notes of all that can be remembered
- Diagram physical layout of setting
- Outline specific acts, events, activities and conversations
- Be descriptive in taking field notes
- Gather a variety of information from different perspectives
- Gather different kinds of data-observations, interviews, recordings, and photographs-and using multiple methods
- Capture participants' views of their experiences in their own words

### **3.4 Focus Group Discussion**

Focus groups are a form of group interview that capitalizes on communication between research participants in order to generate data. This means that instead of the researcher asking each person to respond

to a question in turn, people are encouraged to talk to one another: asking questions, exchanging anecdotes and commenting on each-other's experiences and points of view (Kitzinger, J.,1995). The method is particularly useful for exploring people's knowledge and experiences and can be used to examine not only what people think but how they think and why they think that way. The idea behind the focus group method is that group processes can help people to explore and clarify their views in ways that would be less easily accessible in a one to one interview.

### **3.5 Charrette based participatory process**

A planning charrette, is a collaborative planning process that exploits the skills and resources of all interested parties, specific to different stakeholders involved in specific project; to create and support development process at neighborhood, site, zoning, master and/or regional level that represents transformative and dynamic community change. A charrette, over a period of time, has been observed as an innovative and immersive approach to public participation process (Schindler, 2010).

Key principles that define a charrette include:

- Involve all interested stakeholders
- Develop solutions across multidisciplinary specialties; including engineering, architecture, accessibility, planning, economics, public-health and safety, urban design, education, and so on

- Use short feedback loops that advance designs through proposal, review, changes and follow-up reviews
- Develop detailed solutions that address all potential concerns simultaneously
- Organize events at a central location within the study area to be most accessible to stakeholders and the public

### **3.5.1 Participatory mapping**

This involves engagement of community members or participants in geographic mapping of their community's assets like: schools, parks, popular gathering places or sites of historical or cultural significance, needs, opportunities, barriers and other considerations to inform the community planning process. A common form of participatory mapping involves a large photo aerial map of the community for participants to write or draw on with color marking pens.

Maps should include street names, school locations and other features that help participants locate themselves and explain the particular purpose of the mapping activity (Davis, et. al, 2013). This activity will be used to identify accessible and inaccessible areas experienced by persons with ambulatory disabilities in their respective communities.



Figure 3-2 Participatory Mapping  
(press)

( [www.lgc.org/word-](http://www.lgc.org/word-press)

### 3.5.2 Visual preference surveys in focus group discussion

The Visual Preference Survey™ (VPS™) is a tool that enables community members to evaluate physical images of natural and built environments. The VPS™ involves asking participants to view and evaluate a series of slides. These photos depict a wide variety of streetscapes, land uses and densities, site designs, roadways, building types, civic and public spaces, parking lots, parks and recreation areas, sidewalks, landscapes and open spaces. Participants view each slide and assign it a score according to their instinctive reaction to the image (Davis, et. al, 2013).



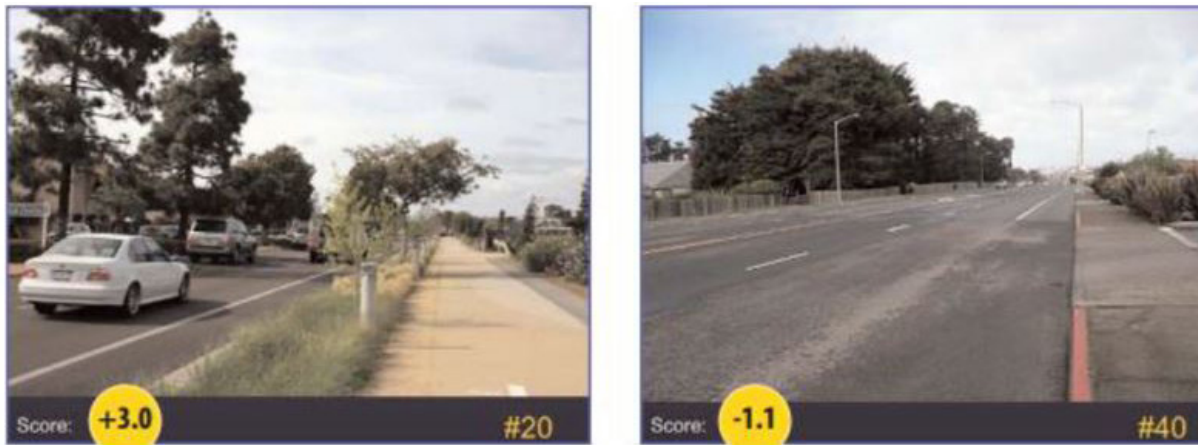


Figure 3-3 Visual Preference Survey

( [www.lgc.org/wordpress](http://www.lgc.org/wordpress) )

### 3.5.3 Photo Visioning

This tool incorporates digitally transforming the existing conditions to visualize proposed changes. Pictures are most often taken from the center of a street, or looking down a sidewalk, at an intersection or facing a building. Features like bike lanes, on-street parking, wider accessible sidewalks, street trees and buildings are then digitally added (Davis, et. al, 2013).



*A "before" photo on the left, with three visions of the same road on the right — adding a sidewalk, median landscaping, a bike lane (including a change of color), and finally a canopy of trees.*

Figure 3-4 Photo Visioning

( [www.lgc.org/wordpress](http://www.lgc.org/wordpress) )



### 3.5.4 Visual methods

Visual methods can be used as stand-alone methods or as complementary with other qualitative methods such as interviews and participant observation.

Different types of visual material (Mah, D. Visual Methods)

- two-dimensional pictures- drawings, maps, diagrams and charts, photographs, paintings, etc.
- moving or electronic images, for example, video recordings, websites, etc.
- material objects themselves, such as, homes, streets, signs, etc.

Producing visual data during fieldwork

- taking photographs or videos from field research to illustrate/reveal research themes
- photo-elicitation interviews
- participant photography or video recording
- spatial visual methods (ethnographic and site observations: body language, streets, buildings, public places, movements, gestures, social interactions, walking methods)
- drawing maps and diagrams
- discussing photographs, images, or other visual materials with
  - informants
  - visual diaries

## Spatial visual methods

- Spatial visual methods: concerned with relationships between people and places/spaces (communities, cities, neighborhoods, homes, public spaces, parks, rural spaces, natural spaces, confined places, policed places, political places)
- Diary-photo diary-interview method, time-space diagram, diary, photo and interview as complementary
- Material culture studies, people's relationships with objects, photos, materials
- Site observations (drawing maps, photographing areas of research, spatial part of ethnographic lens)
- Mobile methods: researching while on the move (participant and/or researcher), conducive to spatial research

### **3.6 What is a 'Comic'?**

Comics communicate in a language that relies on a visual experience common to both creator and audience. It provides an easy understanding of the image-word mix and the traditional deciphering of text (Eisner, W., 2000). A comic: employs a series of repetitive images and recognizable symbols. When these are used again and again to convey similar ideas, they become a language-a literary form. And it is this disciplined application that creates the 'grammar' of Sequential Art (Eisner, W., 2000).

Will Eisner defines components of sequential art in *Comics and Sequential Art* (2000) as:

- Imagery: comics deal with two major communicating devices, words and images
- Timing: to convey timing, which is the manipulation of the elements of time to achieve a specific message or emotion, panels become a critical element
- Framing speech: The balloon is a desperation device. It attempts to capture and make visible an ethereal element: sound. They address our subliminal understanding of the duration of speech
- Framing Time: in comics, timing and rhythm are interlocked.
- The Frame: The fundamental function of comic (strip and book) art to communicate ideas and/or stories by means of words and pictures involves the movement of certain images (such as people and things) through space. To deal with the capture or encapsulation of these events in the flow of narrative, they be broken up into sequenced segments. These segments are called panels or frames. As in the use of panels to express the passage of time, the framing of a series of images moving through space undertakes the containment of thoughts, ideas, actions and location or site. Panel thereby attempt to deal with the broadest elements of dialogue: cognitive and perceptive as well as visual literacy.

- Encapsulation: the rendering of the elements within the frame, the arrangement of the images therein and their relation to and association with the other images in the sequence are the basic grammar from which the narrative is constructed.
- Visual Narration is to record a continued flow of experience and show it as it may be seen from the reader's eyes. This is done arbitrarily breaking up the flow of uninterrupted experience into segments of frozen scenes and enclosing them by a frame or panel
- The Frame as a Narrative Device: jagged outline; long panel; burst out of the confined lines of the panel; absence of panel; cloudlike enclosure, etc.
- Expressive Anatomy: in comic book art, expressive anatomy draws upon personal observations and an inventory of gestures, common and comprehensible to the reader. It involves work from a 'dictionary' of human gestures

Writing for comics can be defined as the conception of an idea, the arrangement of image elements and the construction of the sequence of the narration and the composing of dialogue. Comic as an art is a medium of expression which is primarily visual and involves style, technique and graphic devices designed to dazzle the eye. In short, the comics are deficient in subtlety, delicacy, sophistication. As art, many of the comics are crude. As literature, they are extremely elementary. They deal with ideas and sentiments in the simplest terms (Gruenberg, S., 1944).

As discussed above, the comics are easy to read and understand for all age groups especially youth. Comics are to show the idea to young readers in a fun and generic way. The idea of using comic is to remove stigma of persons with disability. Through comic books, people would learn how to process information differently. Further, comic books and graphic novels can help people learn information that they may otherwise find boring or difficult to understand such as stories from history or other educational information (Scribendi, 2018).

Through comics the author has attempted to present humancentric narrative. The author developed the comics through detailed interviews and oral histories of people having ambulatory disabilities. Firstly, the photographs were taken and later the characters were developed. Through this methodical process, the author has developed a series of comics that relay stories of persons with ambulatory disabilities while protecting their identities and most importantly their dignity as individuals (Dix, 2017). In the process of narrating the stories, these comics would also serve as a great educational resource for the young students. Comics are incredibly powerful educational tools that allow for greater imagination, especially among younger audiences (Dix, 2017). The author, through comics, is able to take the audiences into spaces and lives of persons with ambulatory disabilities that are often ignored, for example, into automobile workshop, to the access audits of government building, to institution that provide physiotherapy and jobs to persons with disabilities and on daily journeys of persons with ambulatory disabilities.

## Chapter 4.

### Planning Initiatives taken by Govt. of India for Persons with Disabilities

Disability is a state subject and figures in the state list in the seventh schedule of the constitution. The Chief Commissioner may thereafter take up the matter with the appropriate authorities; coordinate the work of the State Commissioners; monitor the utilization of funds disbursed by the Central Government; safeguard the rights and facilities available to disabled persons; submit reports to the Central Government on the implementation of the Act at regular intervals. The State Commissioners have the same powers/functions at the State level.



Figure 4-1 Nodal Agency for PwDs in Delhi, India

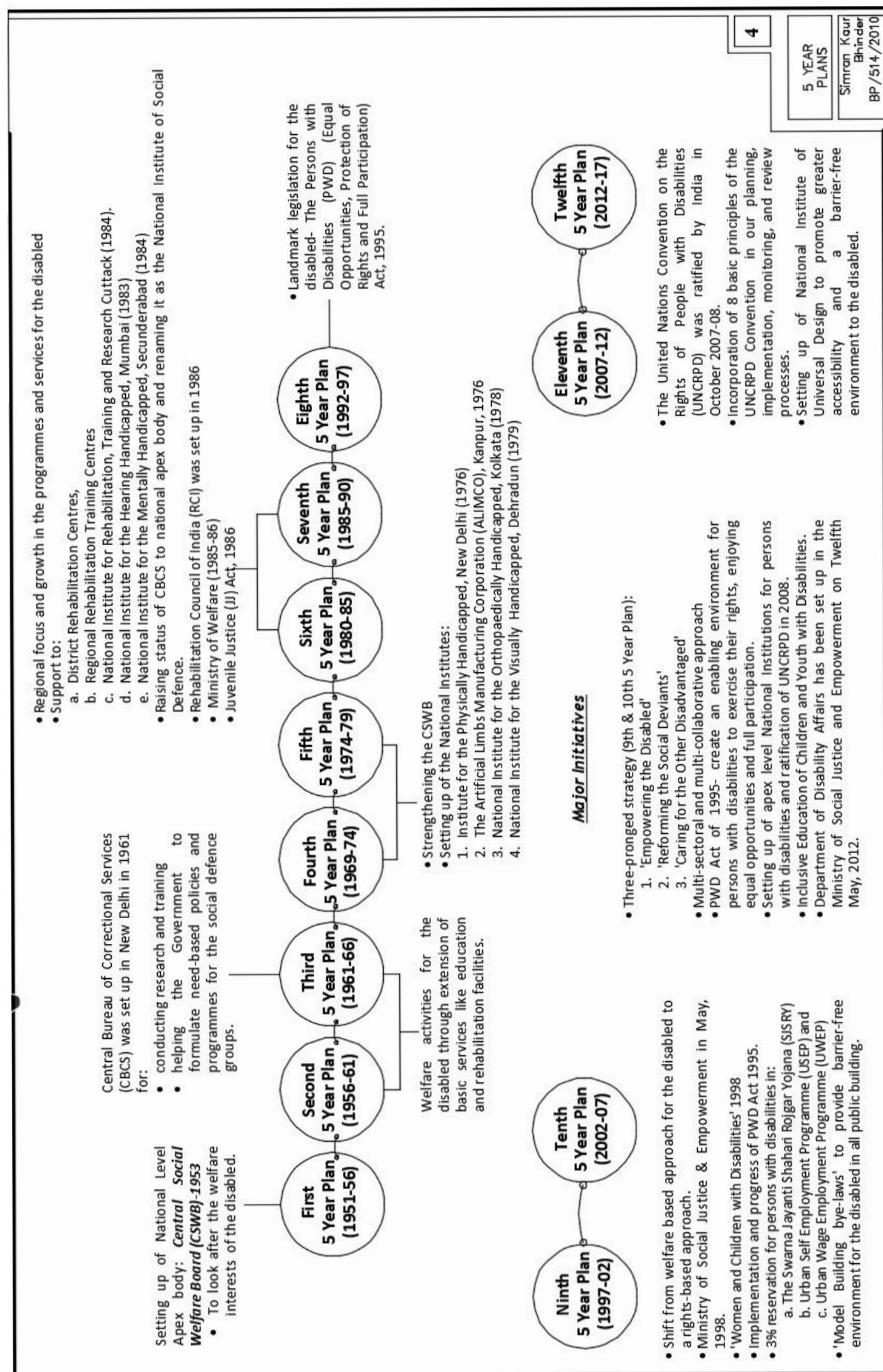
( Bhinder, 2014)

The first seven five-year plans (1951-1990) had welfare-based approach towards marginalized group of societies where there was no specific mention of persons with disabilities in policies. Also, there was no provision of any legislating document or Act for person with disabilities until 7th five-year plan. However, in 8th five-year plan a landmark legislation for person with disabilities was introduced as 'The Persons with Disabilities (PwD) (Equal Opportunities, Protection of Rights and Full Participation) Act 1995. By 9th and 10th five-year plan a shift in welfare-based approach was observed and Ministry of Social Justice and Empowerments was established in 1998. Also, India ratified with the UN convention for rights of persons with disabilities (UNCRPD) in 2007-2008.

Eleventh Five Year Plan (2007 - 12) has made a specific mention of CRPD in the section on Disability. It states that

India being a signatory to CRPD, is now obligatory upon us to incorporate the essence of the Convention in our planning, implementation, monitoring and review processes.

Below is the Figure 4-2, showing major initiatives of government of India during five-year plans for persons with disabilities.





The salient features of Model Building Bye-Laws, 2016 include barrier-free environment with provisions for persons with disabilities, elderly and children including site development, access path/ walk way, parking, building requirements, stair, lifts, toilets, drinking water, refuge and signage.

Applicability of these regulations shall be applicable to all buildings and facilities used by the public such as educational, institutional, assembly, commercial, business, mercantile buildings and group housing constructed on plots having an area of more than 2000 sq.m. It shall not apply to private residential buildings. (Model Building Bye-Laws, 2016).

Detailed provisions under Model Building Bye-Laws, 2016 are described in Appendix 1

Master plan 2021 provisions include transportation. Barrier free environment, night shelter, slum and JJ redevelopment regulations and guidelines, social infrastructure and education. Detailed provisions are discussed in Appendix 2

## Chapter 5

### Analysis

In the previous chapters I talked about methods of conducting the project and concepts associated with disability. This chapter analyzes the surveys and participatory techniques carried out in the research. The survey analysis is divided into several sections namely, profile, mobility aids, mobility, experience of travelling at night, accessibility, information and services, recommendation by the participants and inclusion.

#### 5.1 Profile

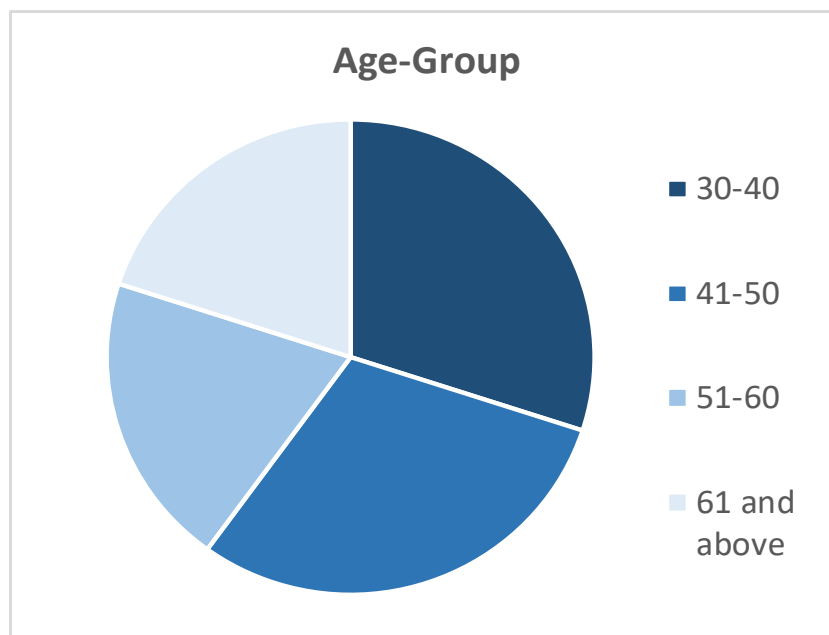


Figure 5-1 Age-Group classification of the participants (Author, 2018)

The age group of majorities of participants ranges between 30-50 years. Other age group ranges between 51-80 years. (Fig 5-1)

Majority of the participants have disability due to accidents and disease. For example, amputation and paralysis are the predominant disability type (Fig 5-2).

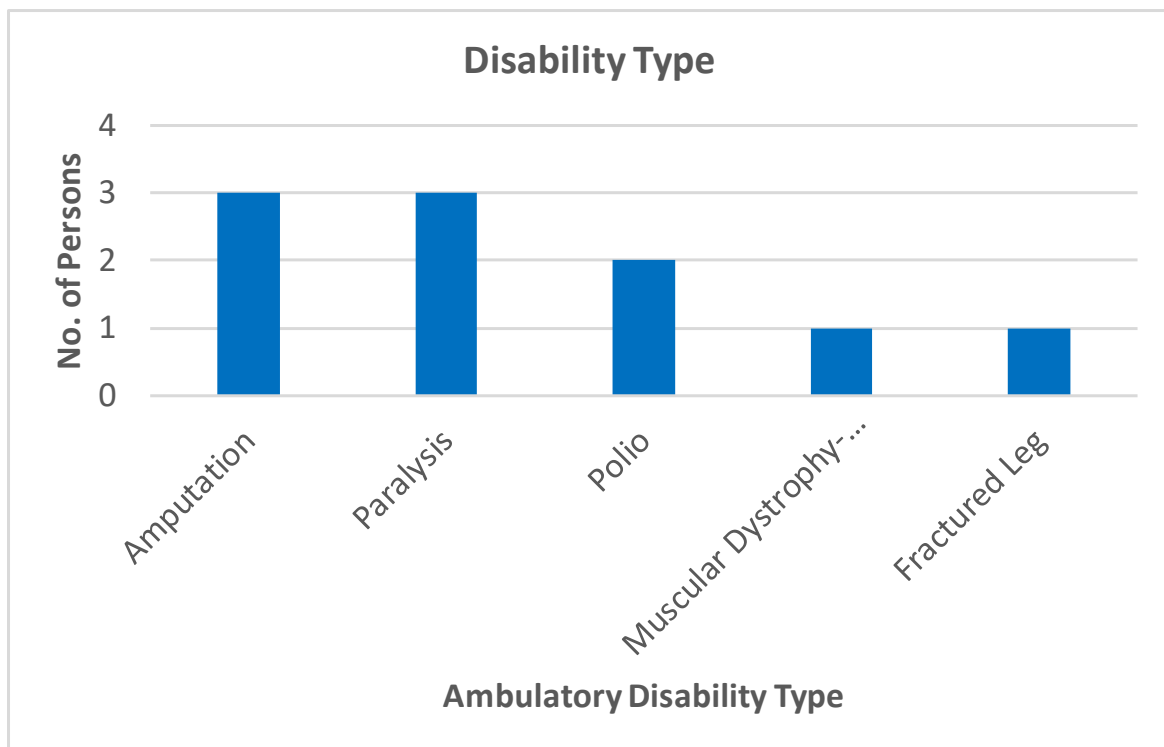


Figure 5-2 Disability type classification of the participants

(Author, 2018)

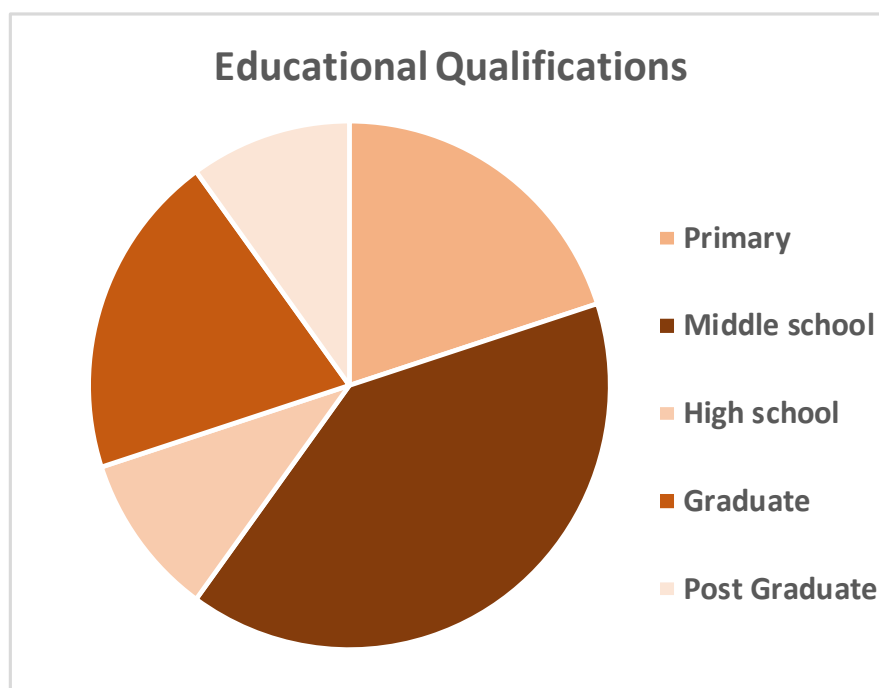


Figure 5-3 Educational qualifications of the participants

(Author, 2018)

Fig. 5-3 shows that the participants are predominantly middle school passed with one participant post-graduated.

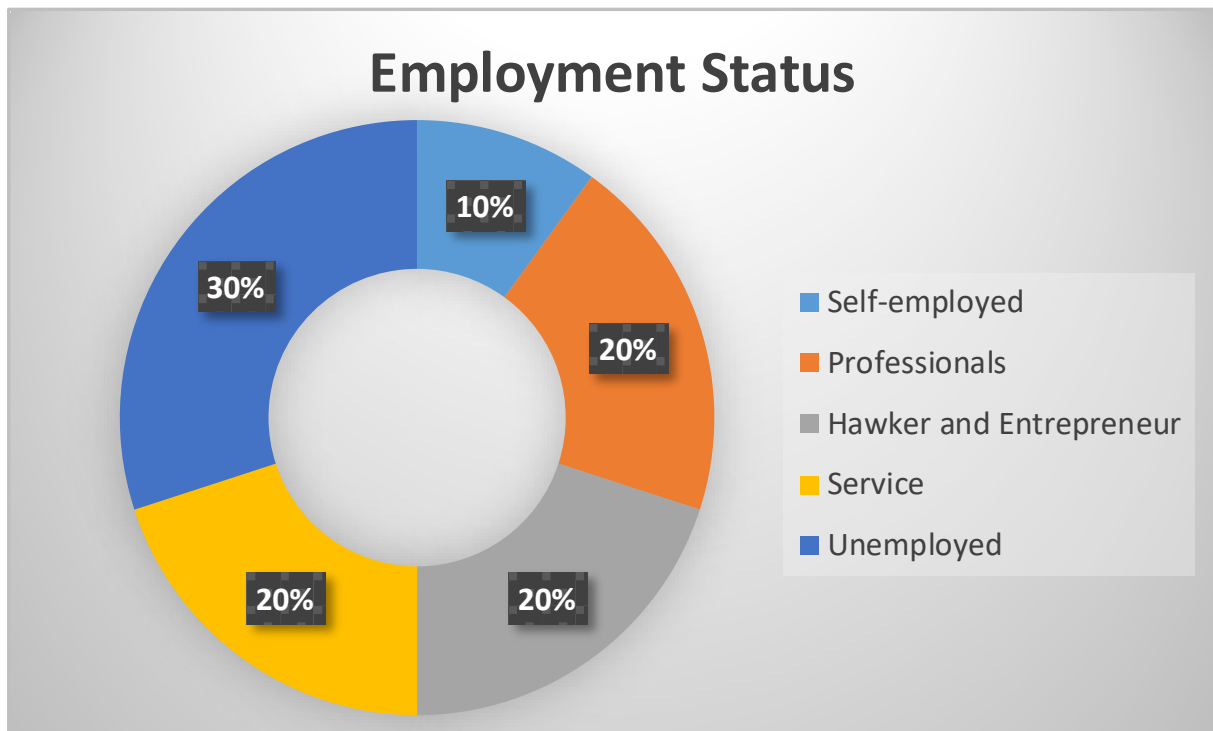


Figure 5-4 Employment status of the participants

(Author, 2018)

Fig. 5-4 shows 30% of the participants are unemployed, with 40 % working in either services or working as professionals. 10% are self-employed and 20% are hawkers. Hawkers are those who sell goods informally in public places.

## 5.2 Mobility aids

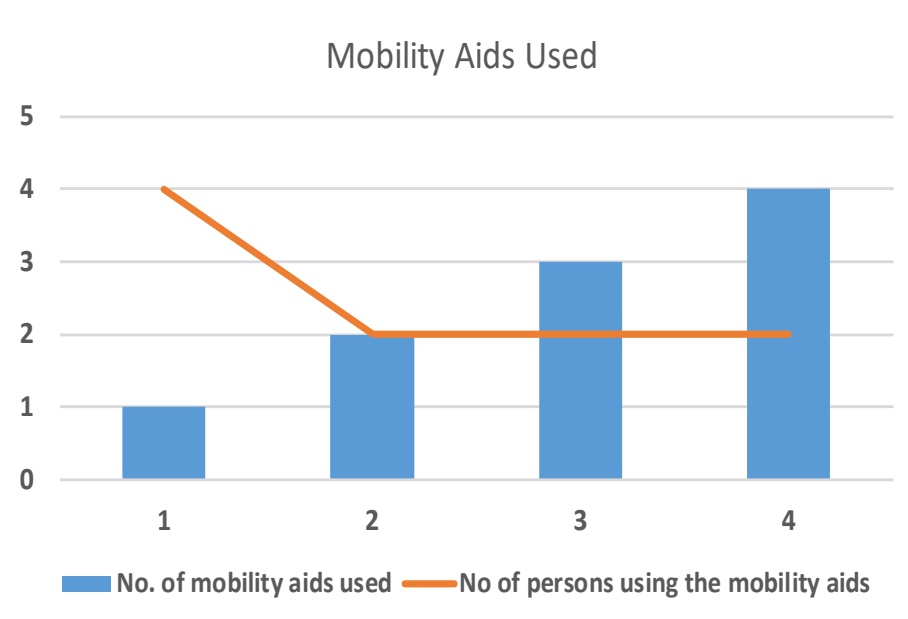


Figure 5-5 Mobility aids used by the participants

(Author, 2018)

Fig. 5-5 shows that the maximum number of mobility aids used are four.

There are different types of mobility aids used by the participants such as, wheelchair, walker, tetrapod stick, crutches, prosthetic foot and modified four-wheeled scooter.

Below (Fig. 5-6) are the images of different types of mobility aids used by the participants for their daily commuting and walking activities and balancing their bodies.

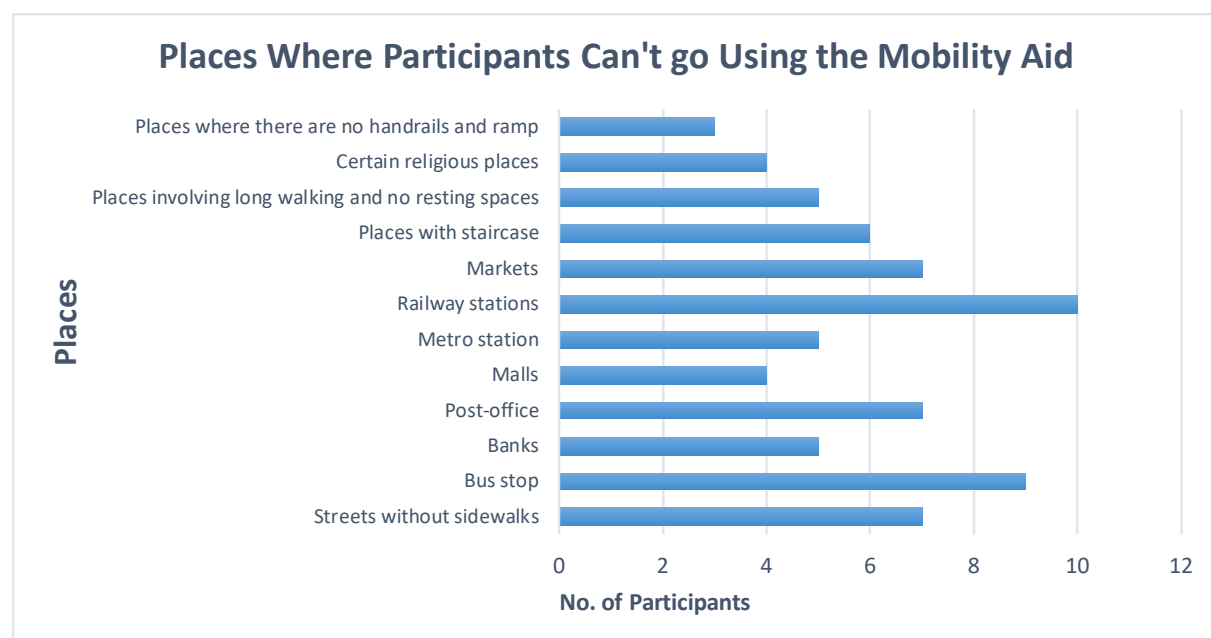


Figure 5-7 Places where participants can't go using the mobility aid

(Author, 2018)

Fig. 5-7 shows the many different places that are inaccessible even when accessed with a mobility aid by the participants. Public transportation is rated to be most inaccessible as railway stations by ten and bus stops by nine participants are considered inaccessible, respectively.

Understanding of different types of mobility aids is necessary for a planner to make provisions for diverse users using the infrastructure in city. The data above shows various public and private places that persons with ambulatory disabilities cannot access, even when they are using their mobility aids. Also, the list of places mentioned above by the participants could be the guiding list for a planner to make provision of inclusive infrastructure.

### 5.3 Mobility

Mobility involves getting around town. Fig. 5-8 shows that there are broadly seven types of purposes of travel. Going out for health reasons and meeting relatives and friends, are the two-main purposes of travel of the interviewed participants. Travelling, for shopping purpose is least considered.

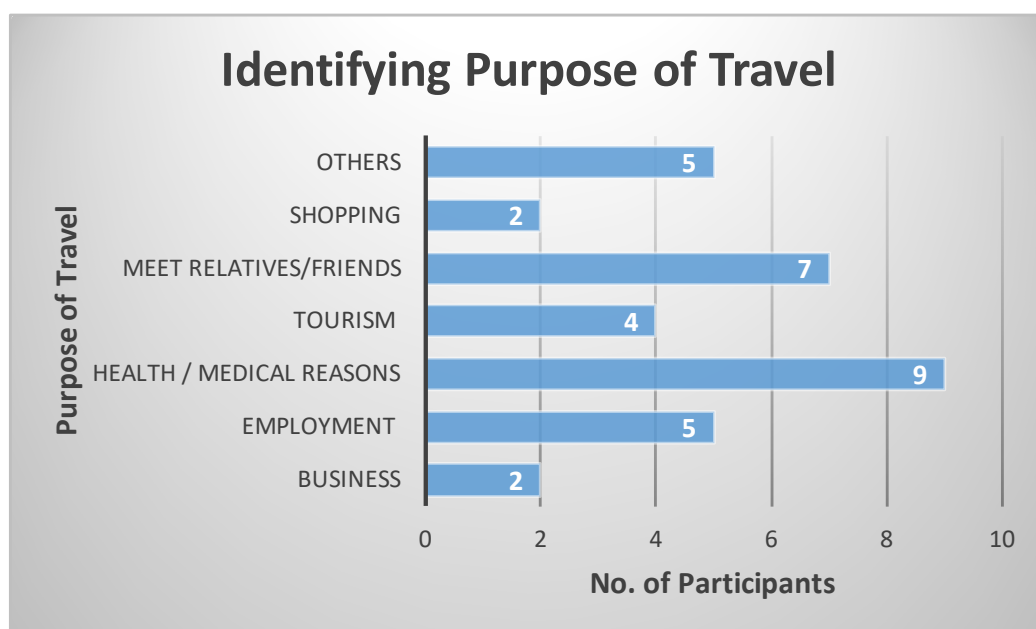


Figure 5-8 Identifying purpose of travel of the participants

(Author, 2018)

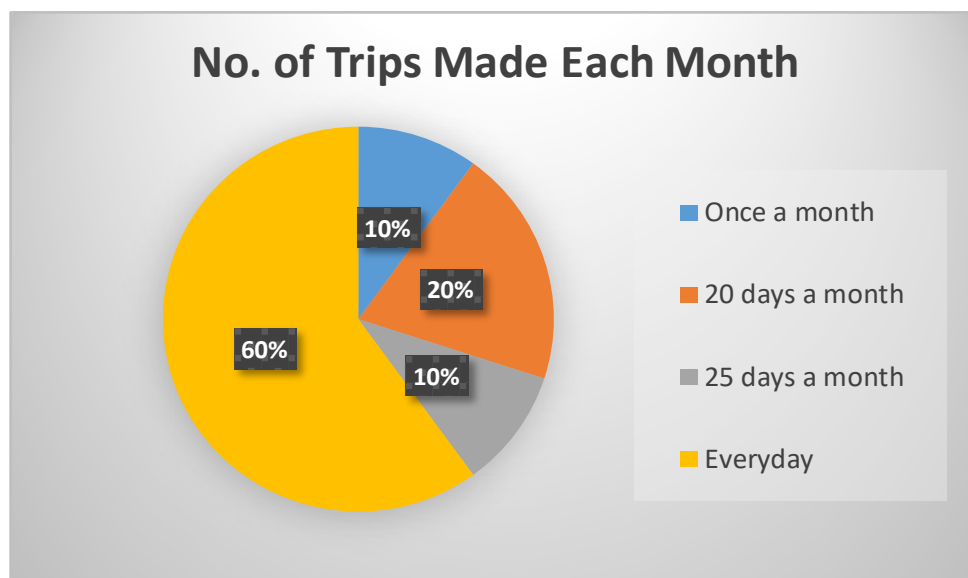


Figure 5-9 Number of trips made each month

(Author, 2018)

Fig. 5-9 shows 60% of the participants commute every day for various purposes, including work, leisure and medical reasons.

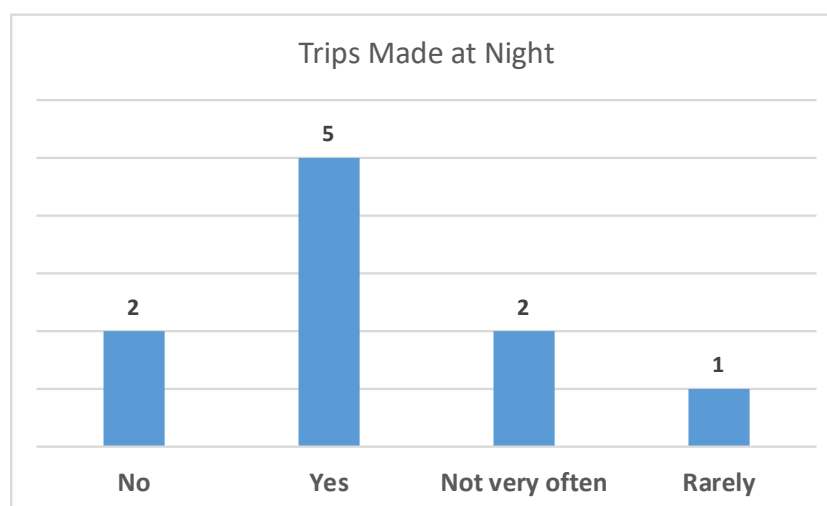


Figure 5-10 Trips made at night by the participants

(Author, 2018)

### Experience of travelling at night:

When asked about the experience of travelling at night, 50% of the participants said they feel safe and usual while travelling at night, whereas, 40% said they don't feel safe and that the city is not safe for women, and 10% mentioned that they don't feel like going out at night.

Mobility survey shows that 60% of the participants travel almost every-day for work and leisure activities. 60% of the participants use their modified four-wheeled scooters to travel, whereas, others use different modes of transportation to travel.

#### **5.4 Accessibility**

Accessibility is one of the most important aspect for everyone including persons with ambulatory disabilities for daily commuting purposes. The table 5-1 shows the accessibility level for various facilities and services rated by persons with ambulatory disabilities in the interviews. Home was considered accessible in comparison to public and private spaces. For example, public spaces like, neighborhood parks, bus stops, road crossings were considered least accessible and public transport like bus is also least accessible. Among public transport, metro is considered accessible, whereas for services, banking is considered as least accessible.



Accessibility Level					
Facilities/Services	Rating (level of accessibility) where 1 is least accessible ranging to 5 being most accessible				
near your area	1	2	3	4	5
Home					
Neighborhood Park/Gardens					
Pavement/Bus stops					
Road/Crossings					

Table 5-1: Accessibility Level

(Author, 2018)

Accessibility Level					
Facilities/Services	Rating (level of accessibility) where 1 is least accessible ranging to 5 being most accessible				
near your area	1	2	3	4	5
<b>Public Transport:</b>					
<b>a. Buses</b>					
<b>b. Metro (a subway transit system in a city)</b>					
<b>c. Auto</b>					
<b>d. Any other (Train)</b>					

Table 5-1: Accessibility Level Cont'd...

(Author, 2018)

Accessibility Level					
Facilities/Services	Rating (level of accessibility) where 1 is least accessible ranging to 5 being most accessible				
near your area	1	2	3	4	5
College/Institution					
Work					
Hospital/Any other medical facilities					
Banking Services					

Table 5-1: Accessibility Level Cont'd...

(Author, 2018)

## 5.5 Information and services

There are not many different sources of information about disability related issues. Majority of the participants mentioned internet access and friends as a source of information. For some, there were no sources of information and for some television and phone were sources of information on disability.

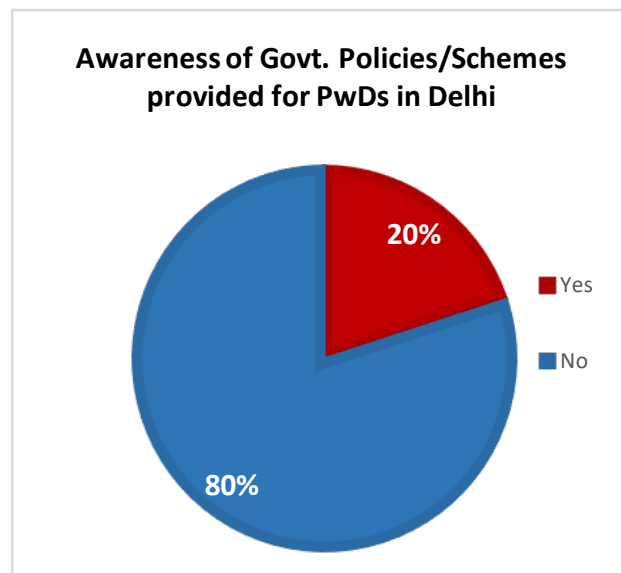


Figure 5-11 Awareness of government policies/schemes provided for persons with disabilities (PwD) in Delhi (Author, 2018)

When it comes to accessing basic information, 90% of the participants mentioned that it is very difficult to access information about anything. Some mentioned that the information is inaccessible; not many of the persons with disabilities are literate and getting services through information is not easy. One mentioned that for 26 years he couldn't find out basic benefits for persons with disabilities. Only one participant was satisfied with accessing basic information.

## 5.6 Recommendations by the participants

Table 5-2 explains the recommendations stated by the participants on accessing basic information on disability and disability related issues.

<b>Recommendations for accessing the information</b>
It should be a seamless journey-from origin to destination; SARA (safety accessibility reliability affordability)
Neighborhood/area councillor/MLA should be able to provide information at residence level of persons with disabilities
Nearby hospitals and physiotherapist centers should provide some information
Raising Awareness; pamphlets distribution
Staff and management should help

Table 5-2 Recommendations for accessing the information

(Author, 2018)

## 5.7 Inclusion

<b>Factors limiting the performance of Persons with Ambulatory Disabilities in a community</b>	
<b>Social (family, neighbors, etc.)</b>	Negative attitude of people and family
<b>Physical (infrastructure)</b>	Poor or inaccessible infrastructure; staircase; high pavements and poorly levelled surface
<b>Economic (work, financial support, etc)</b>	Poverty; Unemployment; Government social security efforts are required; Community security
<b>Legal causes (policies, regulations, etc.)</b>	Can't reach PwDs; Personal is political; Not helping; Non cooperation of Police, administration and New Delhi Municipal Council (NDMC); Lack of awareness of policies/schemes

Table 5-3 Factors limiting the performance of Persons with Ambulatory Disabilities (PwADs) in a community

(Author, 2018)

<b>Factors supporting the performance of Persons with Ambulatory Disabilities in a community</b>	
<b>Social (family, neighbors, etc.)</b>	Positive attitude; Cooperative behavior; Acceptance; Approach and positive attitude to come forward; Family and neighbors as a support system;
<b>Physical (infrastructure)</b>	Inclusive infrastructure; Urban planning efforts to introduce accessible infrastructure; Proper infrastructure; Accessible roads; Conveyance; Conditions of road and pavement; Levelled infrastructure
<b>Economic (work, financial support, etc.)</b>	Income source; Employment; Economic security; Jobs bring self confidence and that the person is no burden on others; Empowerment
<b>Legal causes (policies, regulations, etc.)</b>	Policies that can reach and help persons with disabilities; Equality; No Discrimination; Accessible policies and schemes for PwDs;

Table 5-4 Factors supporting the performance of Persons with Ambulatory Disabilities (PwADs) in a community (Author,2018)

<b>What do participants signify as barriers within the community?</b>
People's attitude
Community-creation of physical barriers social barriers-attitude informational barriers-lack of information
Slippery floor, no ramp, distance between platform and train at the stations; changing of platform is difficult
Conveyance, lack of cooperation, financial problems, miscommunication, lack of information, lack of understanding of disability needs and persons
Wet areas provide slip situations; staircase without handrail, proper lighting and ventilation and width and roads crossings, road conditions; unlevelled surface
People and institutions that create disruption in our income sources or employment
Financial dependence, expenditure, poverty
Poor infrastructure
Staircase and any elevated infrastructure are barriers

Table 5-5 What do participants signify as barriers within the community? (Author,2018)

The above table 5-5 explains the various barriers experienced by persons with ambulatory disabilities in their daily routine within their communities. People's negative attitude and financial dependence and poverty are considered major barriers among others like, lack of conveyance, cooperation, information and understanding of disability needs and persons.

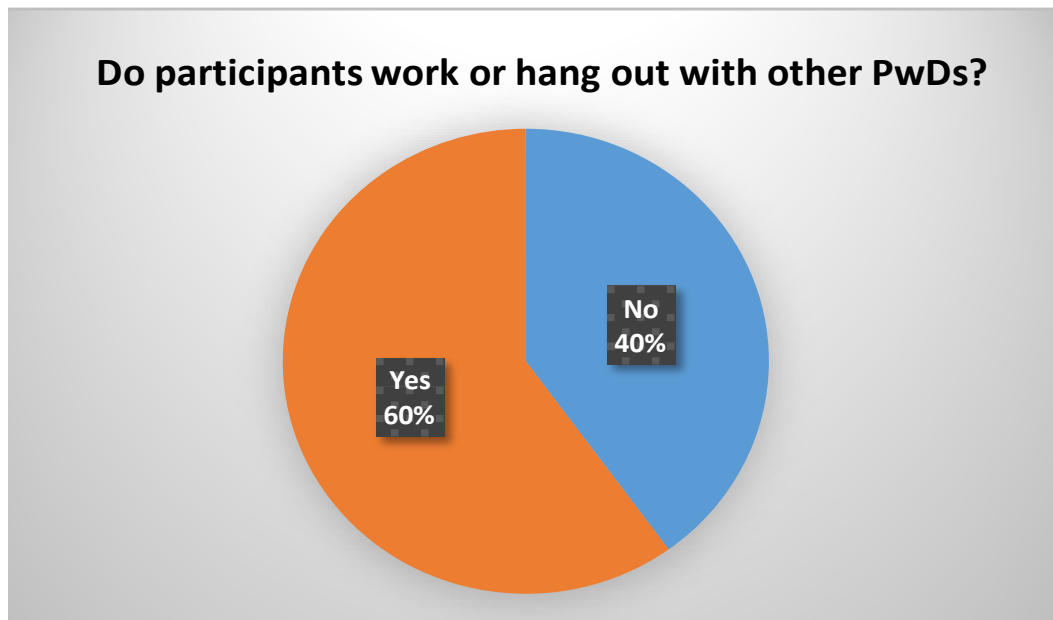


Figure 5-12 Do participants work or hang out with other PwDs.

(Author, 2018)

Fig. 5-12 shows that 60% of the participants do hang out with other persons with disabilities, whereas 40% do not go out with other persons with disabilities.

Fig. 5-13 shows that 70% of the participants sense discomfort while hanging out in public spaces or working in their workplace. Some of the reasons mentioned in the interview for sensing discomfort are as follows:

- stare of people, some unusual talks, police officers are very non-cooperative
- attitude of government officials and police bring sense of discomfort
- sometimes the buildings are inaccessible that brings sense of discomfort

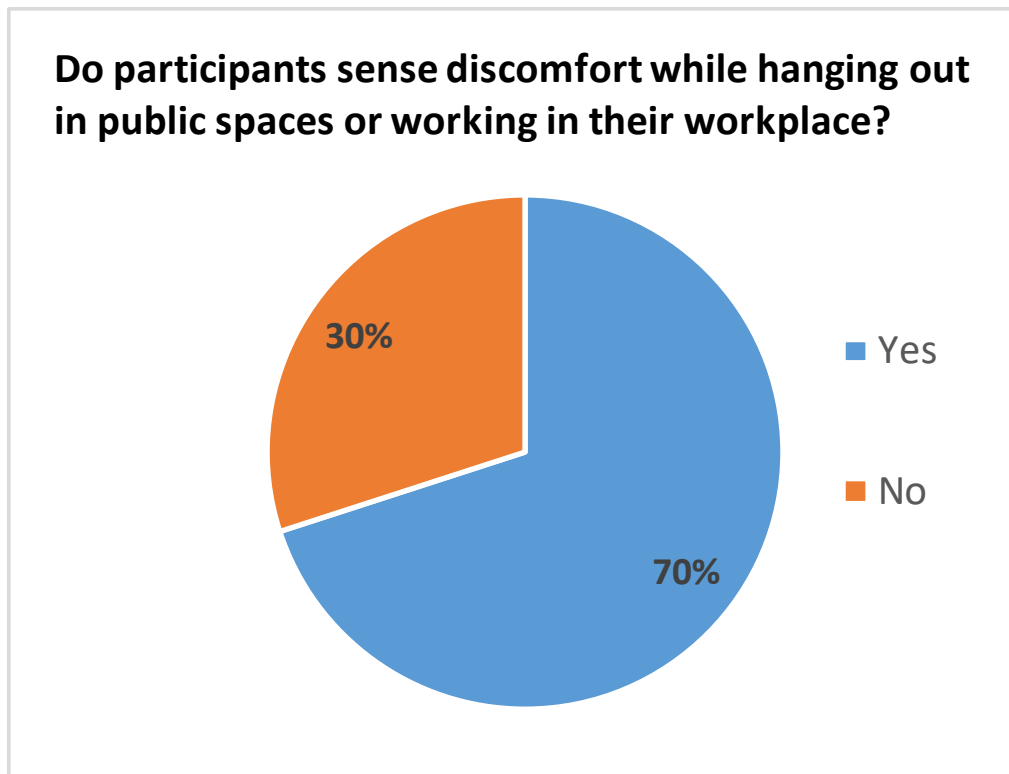


Figure 5-13 Do participants sense discomfort while hanging out in public spaces or working in their workplaces (Author, 2018)

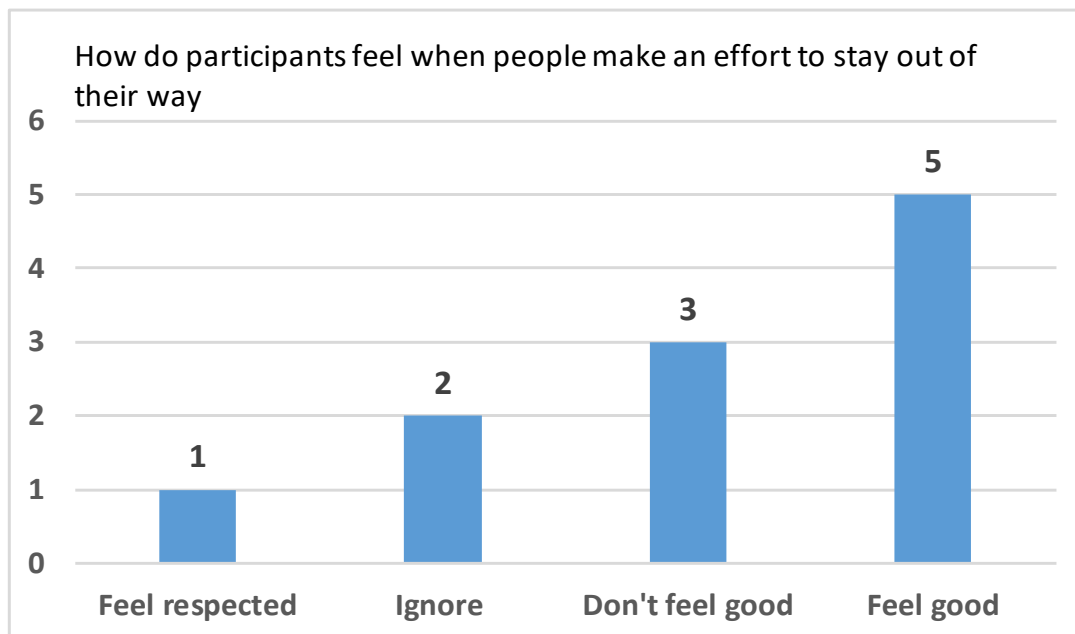


Figure 5-14 How do participants feel when people make an effort to stay out of their way? (Author, 2018)

The above Fig.5-14 shows that 50% of the participants feel positive when people make an effort to stay out of the way, however, 30% don't feel good about it and 20% ignore such situation.



When asked about initiatives of local institutions towards the empowerment of PwDs in their respective communities, the majority expressed their sadness towards the same. It was asked that how local institutions help, include or give power and opportunity to the disabled community; 80% of the participants said that no local institutions provide help or information regarding disability. Whereas, 20% agreed that local institutions do provide support in terms of provision of modified scooter for commuting and crutches to be able to walk again.

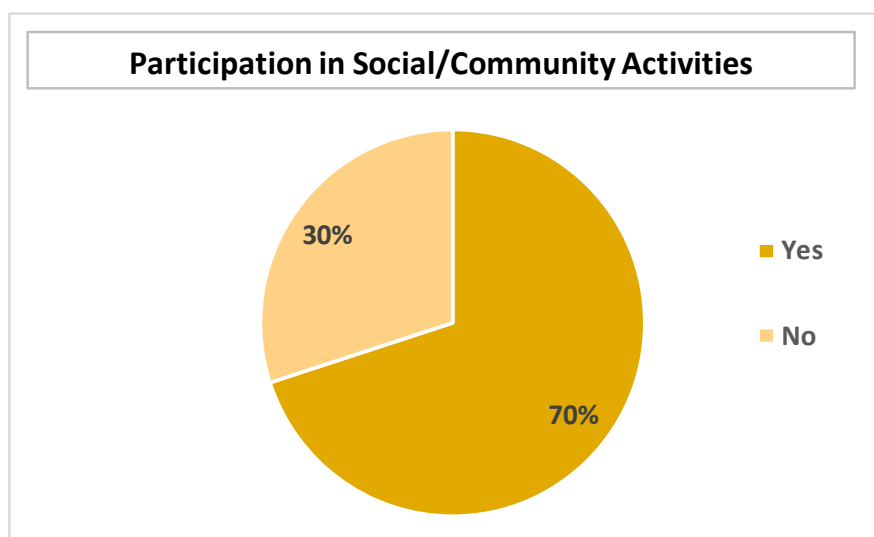


Figure 5-15 Participation in Social/Community Activities (Author, 2018)

Fig. 5-15 shows that 70% of the participants participate in social/community activities, whereas, 30% of the participants don't. Social/Community activities include attending marriage functions, religious gatherings, and other ceremonial functions.

Major challenges experienced/overcome by PwDs are considered as negative attitude of others, discrimination in basic rights such as, education, employment and justice; limitation in full participation like in decision making process, and inaccessibility to information and physical infrastructure.

90% of the participants are not satisfied with the initiatives of government for PwDs in the development process and only 10 % are satisfied. When asked for recommendations, following are the responses:

- all government policies should be inclusive of PwDs
- self-employment is necessary
- don't lose strength and will power; hard work is required to achieve what you want
- social survey should be done and local hospital and police stations should keep track of PwDs; volunteers should be there who can share information with PwDs about policies/schemes. Socially, people should be supportive and boost the confidence of PwDs. If such mental support is not there, then the PwDs will not even come out of their house
- Government should support and help by providing means of employment
- empowerment, employment is must.

### **Conclusion**

In depth interviews of 10 respondents were carried out in this creative project. Out of 10, four were female participants and six were male. 70% of the participants were employed and 30% of the participants were unemployed. Public transportation and certain other public spaces are considered inaccessible by the participants, even when they use their mobility aids to access the above. 60% of the participants commute every

day for various purposes including employment and thus it is important to provide accessible transportation system for convenient travels.

Safety is an issue that is brought by the participants when asked about travelling at night. In accessibility, neighborhood parks/gardens, road crossings, buses and bus stops, and banking services are considered least accessible by persons with ambulatory disabilities.

In response to awareness of government policies/schemes, participants recommended that local area councilors should provide information to persons with ambulatory disabilities at residence level and neighborhood hospitals and physiotherapy centers should also provide information on policies/schemes.

There are broadly four factors (social, physical, economic and legal causes) identified that contribute to disabling as well as empowering of persons with ambulatory disabilities. Factors limiting the performance of or disabling persons with ambulatory disabilities are listed below:

- Social- negative attitude of people towards disability
- Physical- poor or inaccessible infrastructure
- Economic- poverty and unemployment
- Legal causes- lack of awareness and accessibility to policies/schemes

Factors supporting the performance of or empowering persons with ambulatory disabilities are listed below:

- Social- positive attitude and cooperative behavior of neighbors and family members; neighborhood working as a support system

- Physical- Inclusive infrastructure, accessible conveyance and transportation system
- Economic- employment, economic security and empowerment
- Legal causes- policies/schemes that can reach persons with disabilities, equality and no discrimination with regards to disability in various policies

There are two kinds of barriers-visible and invisible barriers-as mentioned above in literature review. However, the study approached different persons with ambulatory disabilities to understand about barriers from their perspective.

Surprisingly, the participants were very clear about physical, attitudinal and informational barriers and listed those as:

- Social: People's negative attitude, lack of cooperation, lack of understanding of disability needs
- Legal: Lack of information, miscommunication
- Physical: slippery flooring, no ramp, changing of platforms at railway stations, staircase without handrail, inadequate lighting and ventilation, inadequate width of roads/streets, lack of sidewalks, poor road conditions and unlevelled surface
- Physical: Inaccessible conveyance
- Economic: financial problems, expenditure, poverty

70% of the participants sense discomfort in going out to public places because of the stare of people, inaccessible buildings, attitude of

government officials and police. Contribution of local institutions in empowering persons with ambulatory disabilities is considered in negative by 90% of the participants. Major challenges experienced/overcome by PwDs are considered as negative attitude of others, discrimination in basic rights such as, education, employment and justice; limitation in full participation like in decision making process, and inaccessibility to information and physical infrastructure.

Analysis (Chapter 5) explains the facts of persons with ambulatory disabilities who are interviewed in the project, both quantitatively and qualitatively.

Chapter 6 and 7 discusses the case study areas and residents with ambulatory disabilities in detail. The chapters highlight the limitations posed and opportunities offered in the two communities to persons with ambulatory disabilities. This is a qualitative representation of data collected in the form of sketches and stories.

## Chapter 6

### Case study areas

The case studies for this project will focus on Ramesh Nagar and Masarovar Garden neighborhoods. Ramesh Nagar is a small residential neighborhood in Western part of Delhi. The neighborhood comprises of a central park and several other small pockets of parks. There are four main streets that connect the neighborhood with central park and along which commercial and mixed use activities take place.

Ramesh Nagar neighborhood is chosen as a case study area because it provides different characteristics of a neighborhood, such as residential, commercial, mixed-use as well as recreational activities. For this study, I observed the accessibility to these different uses by persons with ambulatory disabilities in the neighborhood. Other areas from where participants were interviewed are Laxmi Nagar, Krishna Nagar, Janpath, and Karkarduma.

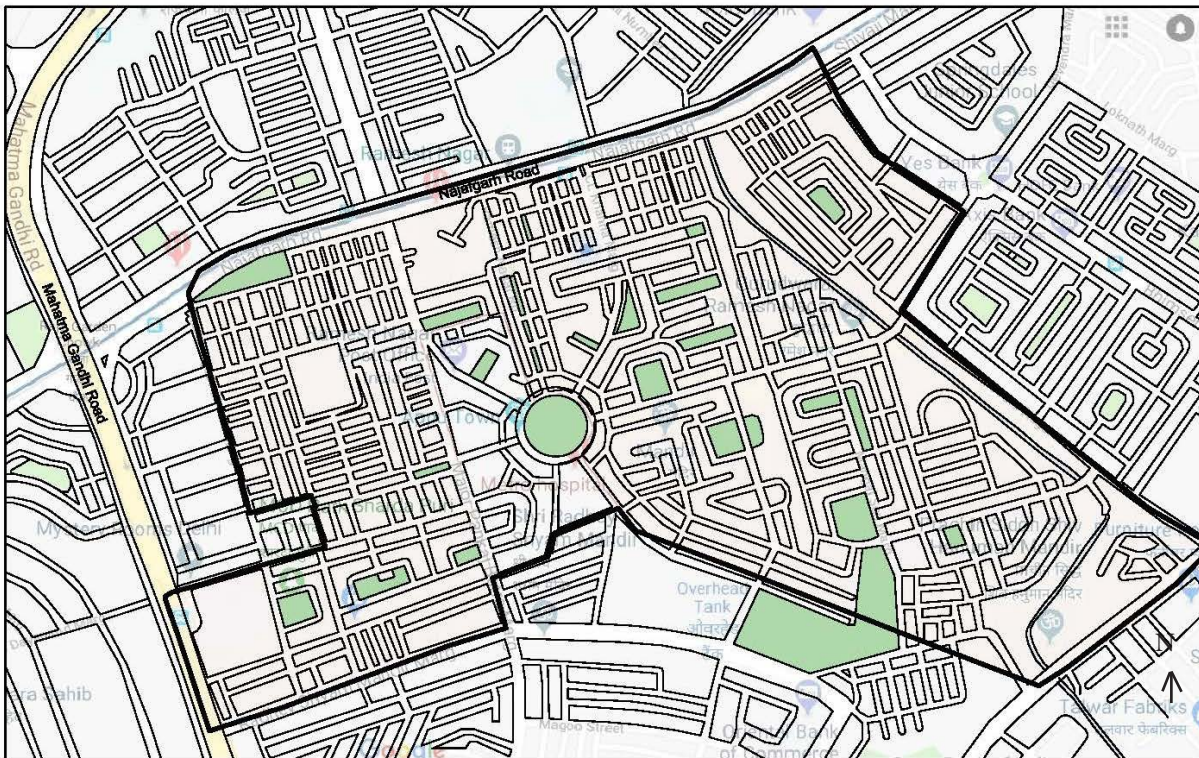


Figure 6-1 Ramesh Nagar Neighborhood (Image N.T.S.) (Map by Author, modified from Google maps)





Figure 6-2 Main road to Ramesh Nagar

(Author, 2018)

This is the main road that connects residential area to the Ramesh Nagar main market area. Main road used to have footpaths on both sides, which are now removed to accommodate space for car parking.

The road is a two way and both motorized (like battery-rickshaw, scooters, cars) and non-motorized (like rickshaw, bicycles) vehicles and pedestrians use it.

Fig. 6-3 shows the same main road with different characteristics, like, businesses running on the ground floor and residential on first and second floor. Footpath space is being encroached by vehicular parking, hoardings and other advertisement boards. People are using the space in front of their shops to sit and chat.

Development on both sides of the main road is predominantly mixed use. Lack of sidewalks make pedestrians to walk on carriageway.



Figure 6-3 Main road to Ramesh Nagar with different characteristics

(Author, 2018)

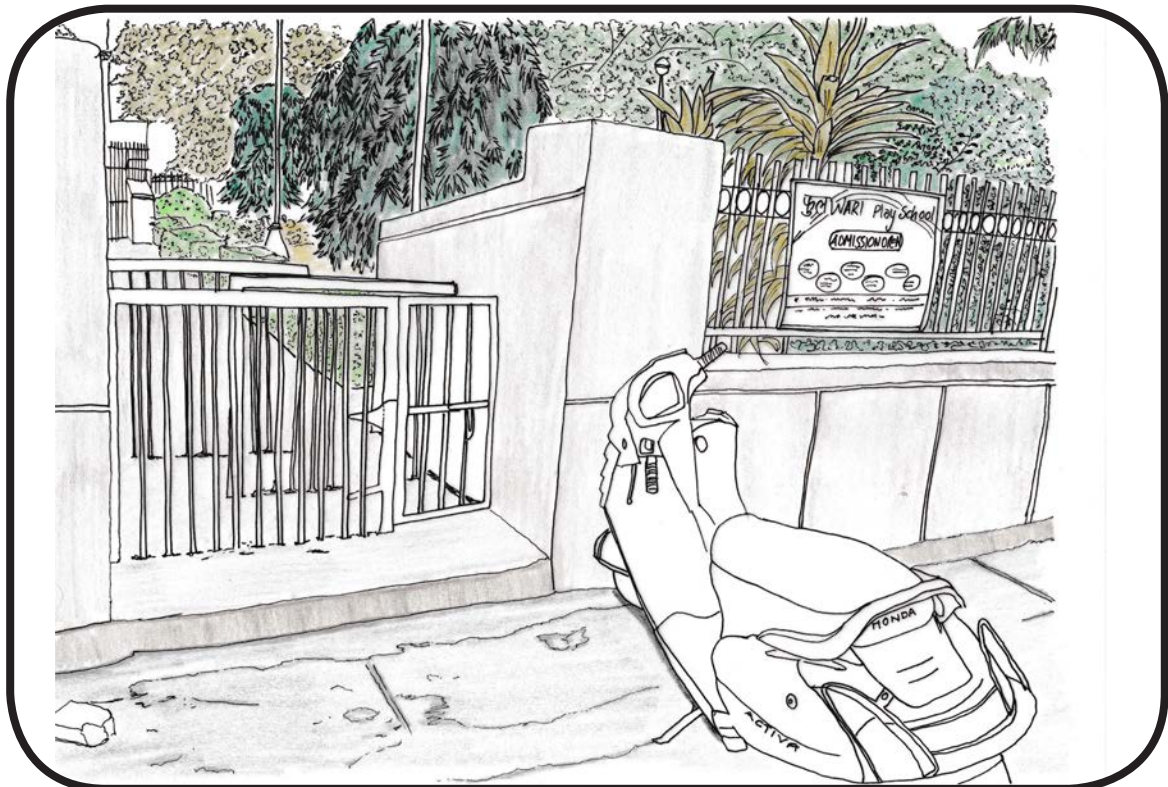


Figure 6-4 Neighborhood park with wicked gates

(Author, 2018)





Figure 6-5 Neighborhood park with possible accessible entrance locked

(Author, 2018)

The entrance to neighborhood parks is marked by wicket gates that prohibits the entrance of wheelchair and walker users as shown in Fig 6-4.

Entrance, that could be made accessible for all, is either locked or blocked by car parking (Fig 6-5 and 6-6).



Figure 6-6 Neighborhood park with possible accessible entrance blocked

(Author, 2018)

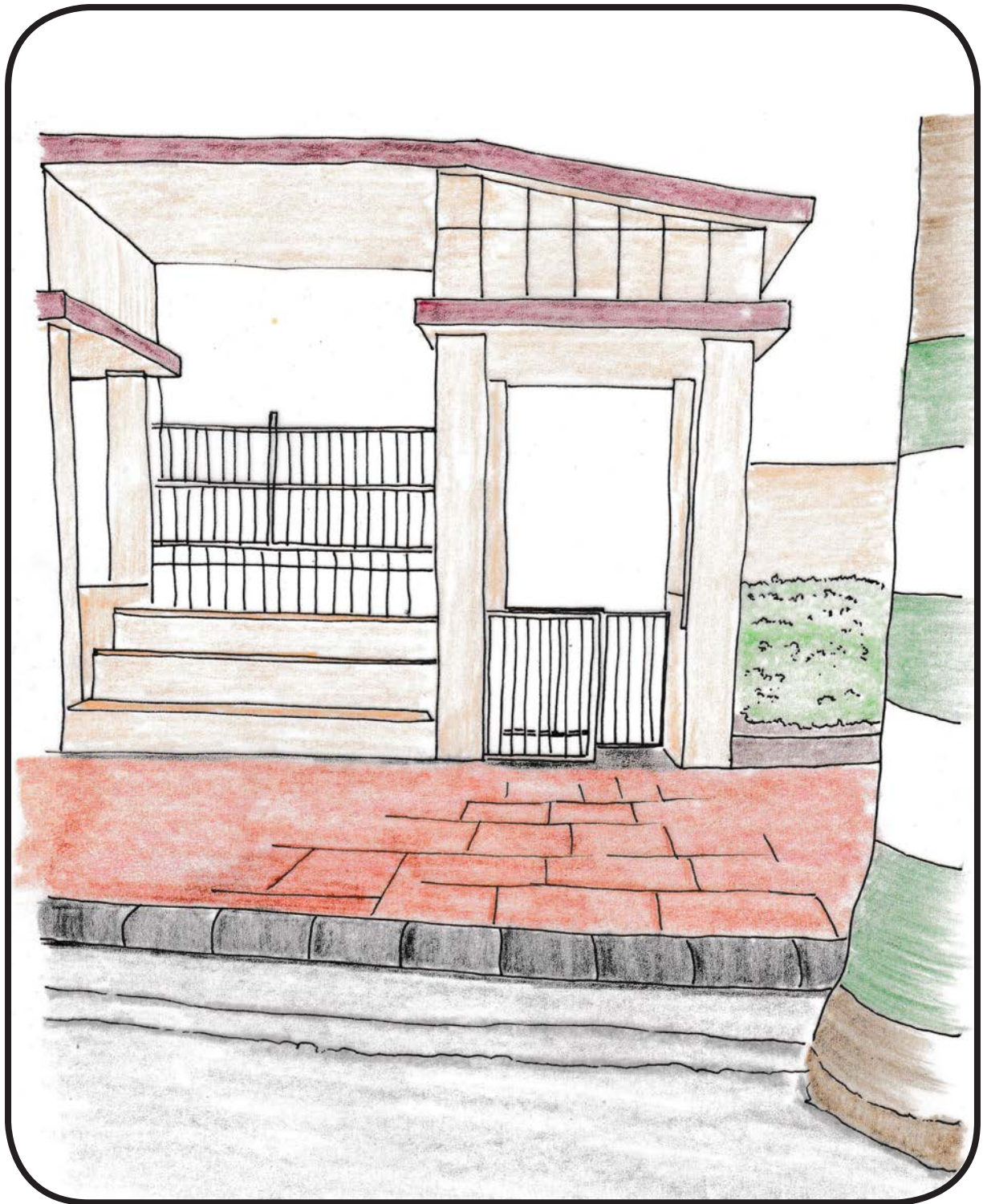


Figure 6-7 Central park's entrance in Ramesh Nagar is also marked by wicked gates (Author, 2018)



Entrance to central park is marked by four gates, out of which, three are wicketed gates and one is accessible entrance gate.

Accessible entrance gate is connected to sidewalk of the park through a cemented ramp (Fig 6-8), which makes it convenient to walk and bring wheelchairs and walkers inside.



Figure 6-8 Accessible entrance at the central park in Ramesh Nagar

(Author, 2018)



Figure 6-9 Accessible entrance being used by other users

(Author, 2018)

Accessible entrance gate is also used by children to bring their bicycles (Fig. 6-10) inside the park as well as by the street vendors to bring their carts to park inside. Some people also bring their scooter and park it inside on the sidewalk.

Parking of vehicles and carts on the sidewalk through accessible entrance is a negative use of the space. Awareness is necessary among the people about the use of accessible entrance gate.



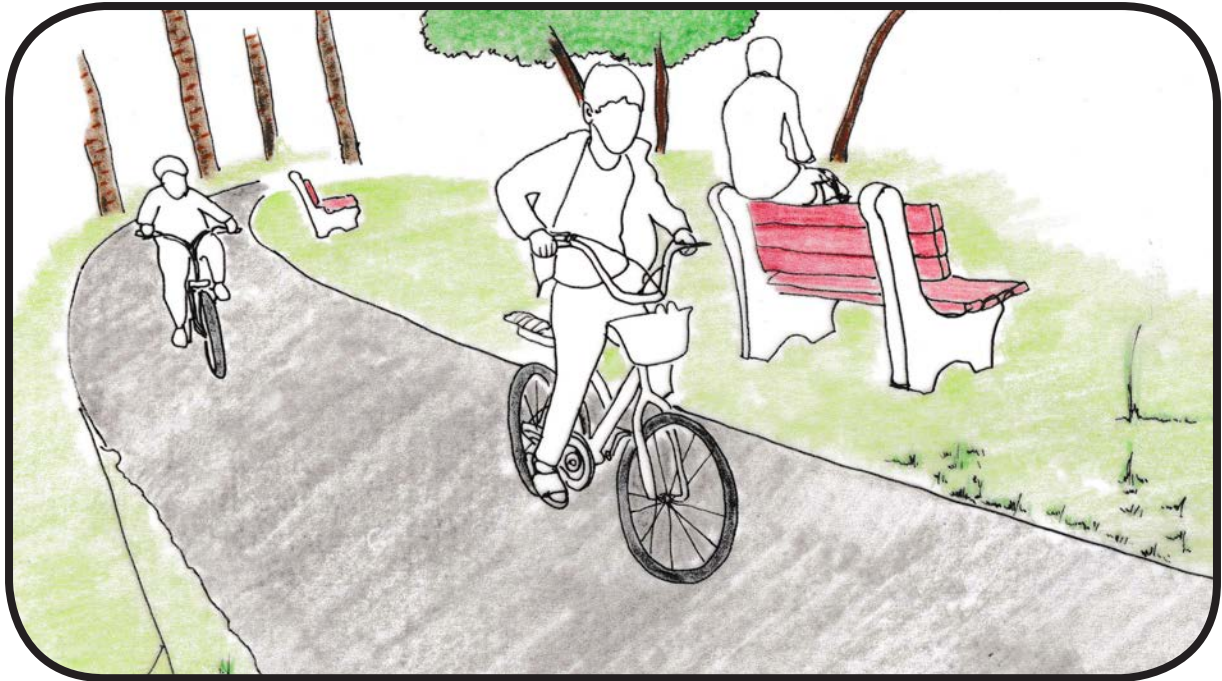


Figure 6-10 Accessible entrance being used by children to bring cycles

(Author, 2018)

Central park has a children's playground area, entrance to which is accessible to all children. I found a child with disability playing with his friends in this children's playground (Fig 6-11 and 6-12).



Figure 6-11 Accessible children's playground

(Author, 2018)



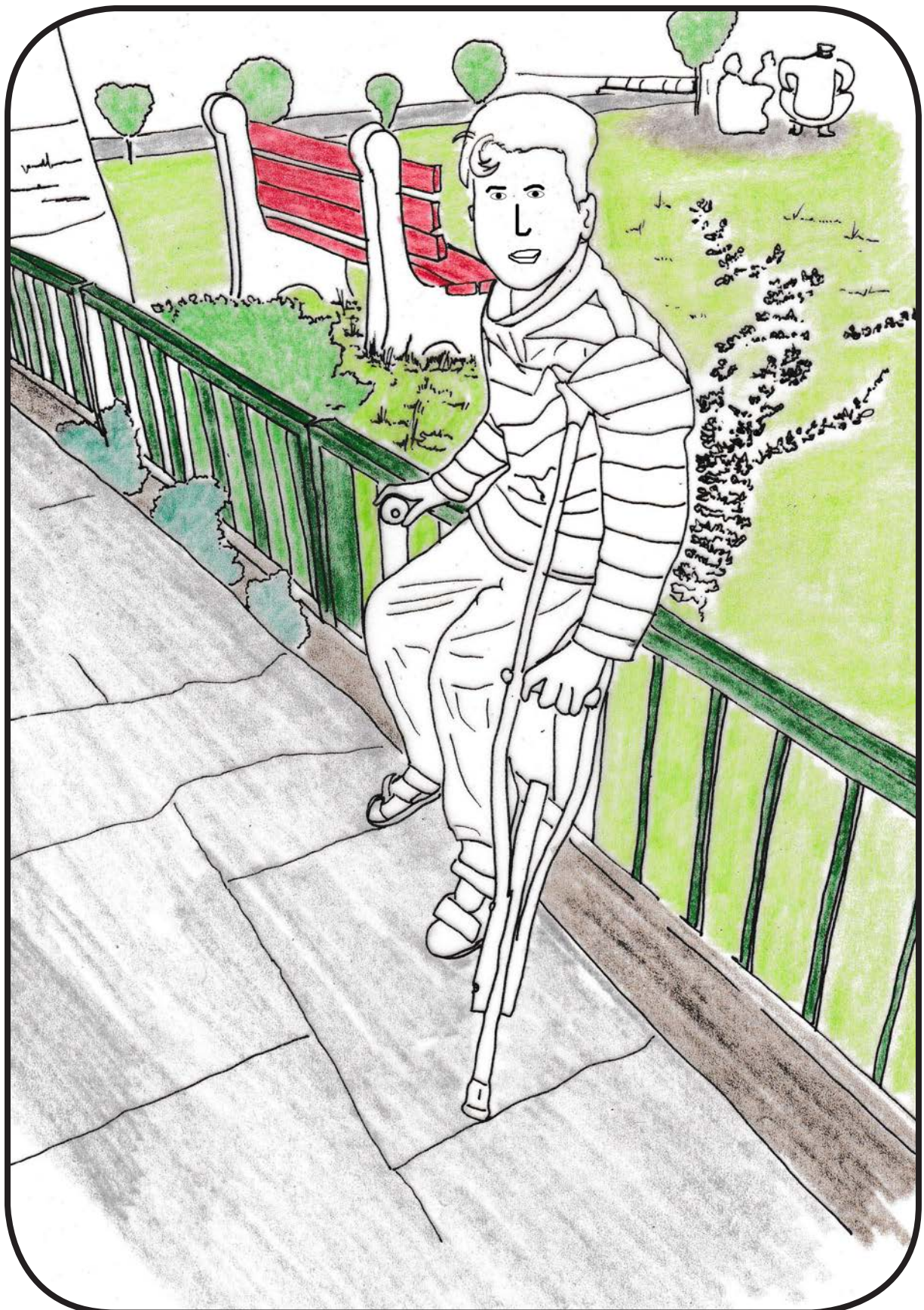


Figure 6-12 Accessible children's playground

(Author, 2018)







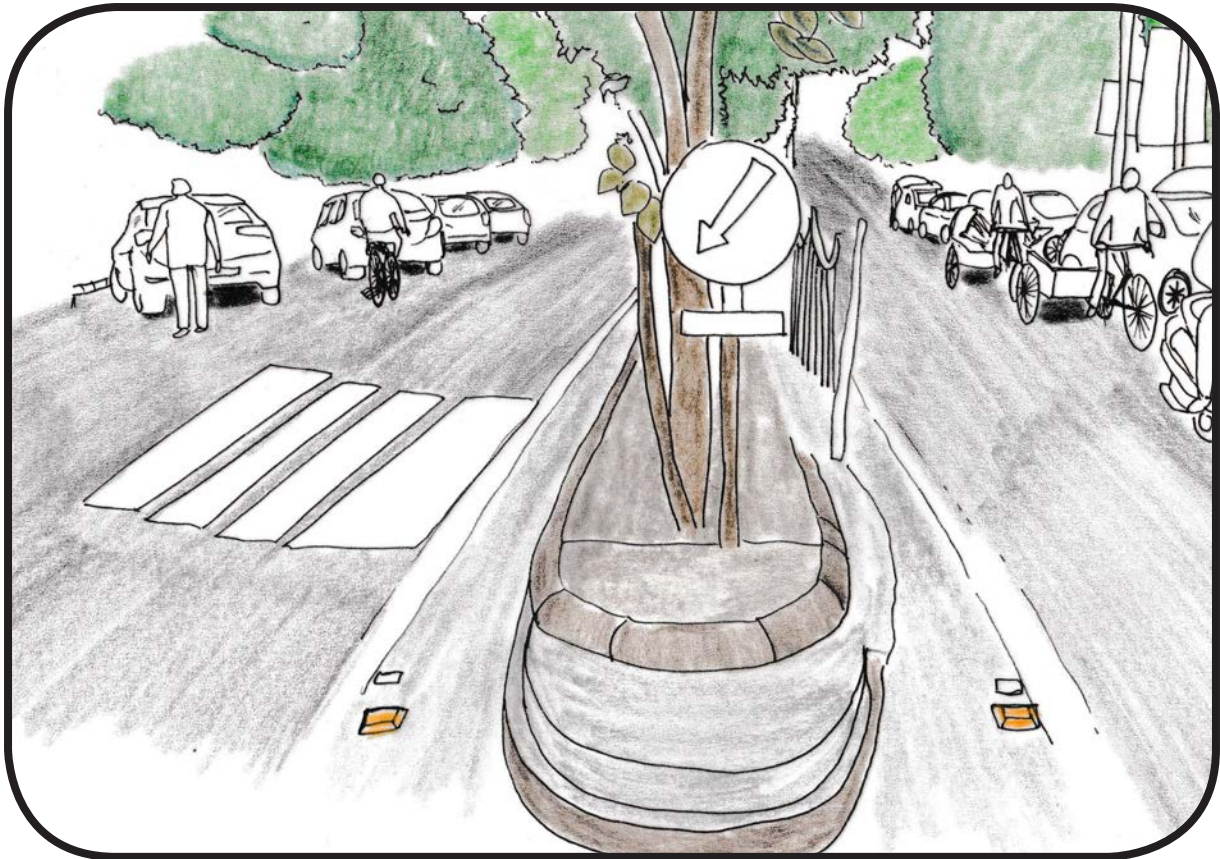


Figure 6-14 Median with no median refuge for crossing

(Author, 2018)

here's no median refuge for crossing the road for persons using wheelchair, crutches and other mobility aids (Fig 6-14). Below is the Mansarovar Garden park, of which entrance is blocked by the parking of two wheelers (Fig 6-15).



Figure 6-15 Entrance to the park in Mansarovar Garden is blocked by two-wheeler parking(Author, 2018)





Figure 6-16 Advertisement board in the middle of footpath

(Author, 2018)

There's a light pole in the middle of sidewalk and other advertisement boards and hoardings that are reducing the effective width of the sidewalk; thereby making difficult for persons using wheelchair and visually impaired persons to use the sidewalk.





Figure 6-17 No sidewalks along the road for pedestrians to walk

(Author, 2018)

Main road to Anjee's home has no sidewalks and the space for sidewalks is encroached by car parking.

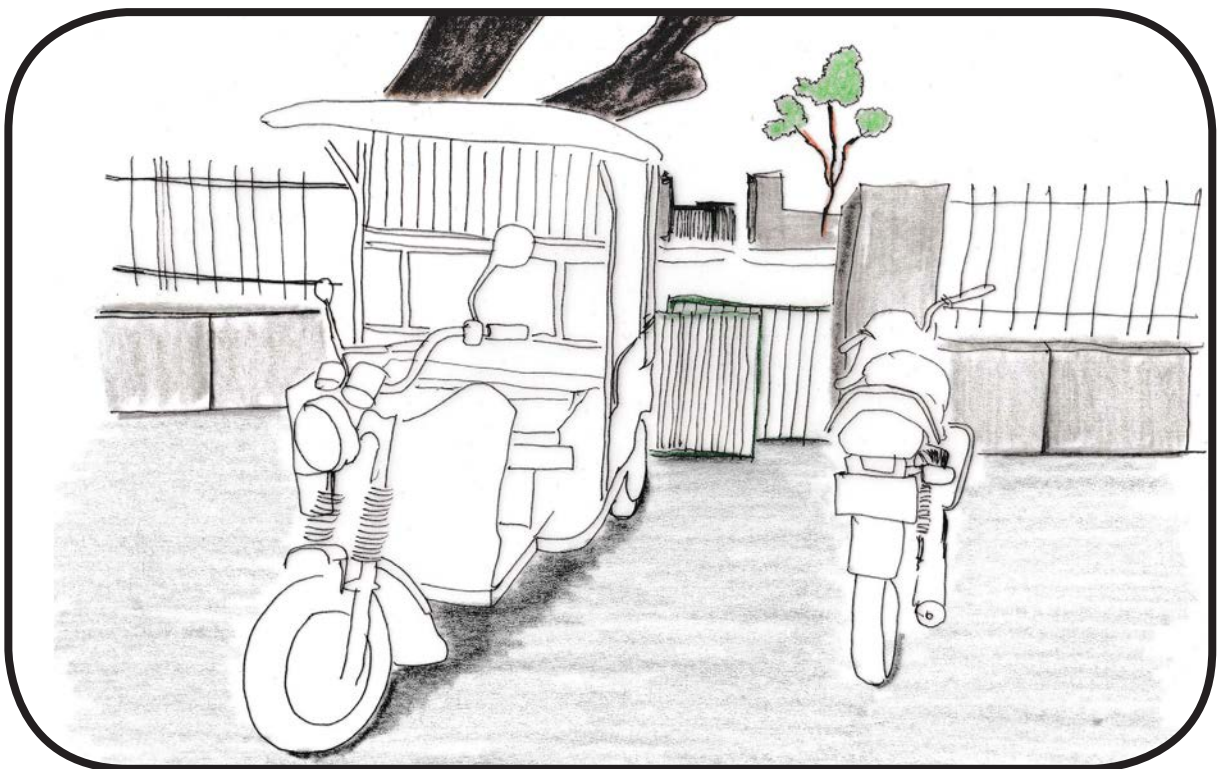


Figure 6-18 Park near Anjee's home is blocked by two-wheeler parking.

(Author, 2018)



Figure 6-19 Accessible entrance to the park is blocked by car parking

(Author, 2018)

There's an accessible entrance gate in the park, however, it is blocked by car parking. Also, a ramp could be extended from the sidewalk to make it accessible for all users.

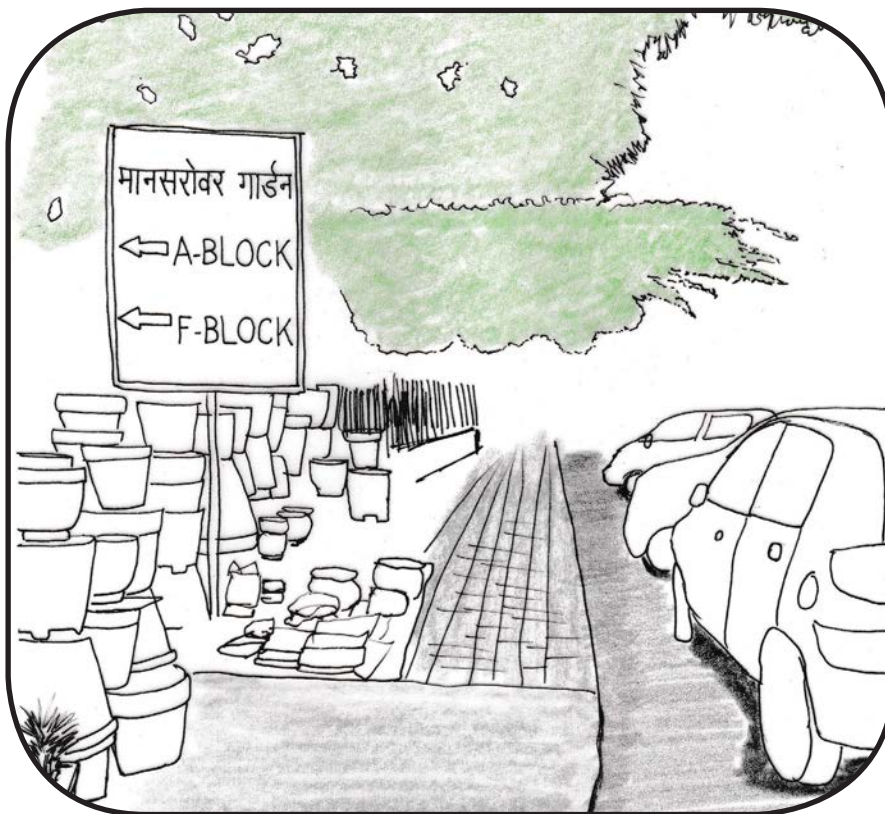


Figure 6-20 Access to the footpath is blocked by flower pot seller and car parking

(Author, 2018)

## Chapter 7

### Coexistence and Reconciliation

The project studies coexistence between integrated groups of a community, which are interdependent and interact with each other. For example, coexistence between different groups (ageing population, children, persons with disabilities, persons without disabilities) of a community that are interdependent for their daily activities and interact with each other.

Reconciliation is the harmonical acceptance that acknowledges suffering, injustice and shared security and well-being in a community. This chapter talks about the stories of different persons with ambulatory disabilities and how they cope with the physical and social environment.

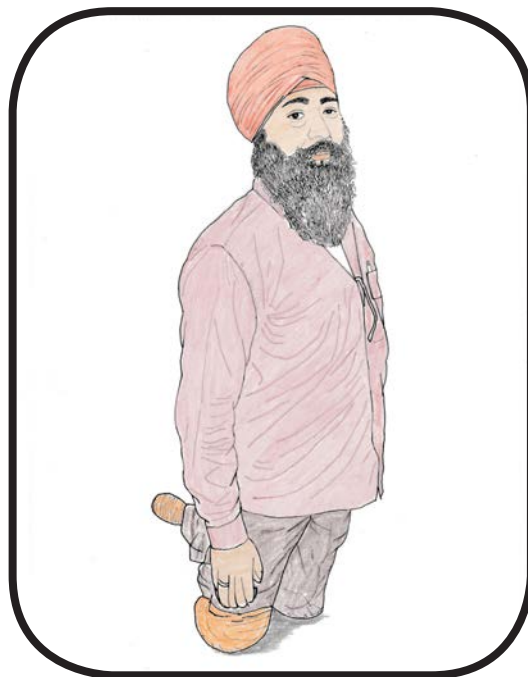


Figure 7-1 Gurcharan Singh

(Author, 2018)

Gurcharan Singh is 50 years old. He lives in Ramesh Nagar neighborhood in New Delhi, India. He is self-employed and works as an automobile technician in various workshops in and around Delhi.



He met with an accident in 1992 and had to get both of his legs amputated. From then he walks on his knees and uses a modified four-wheeled scooter for moving about in and around the city.

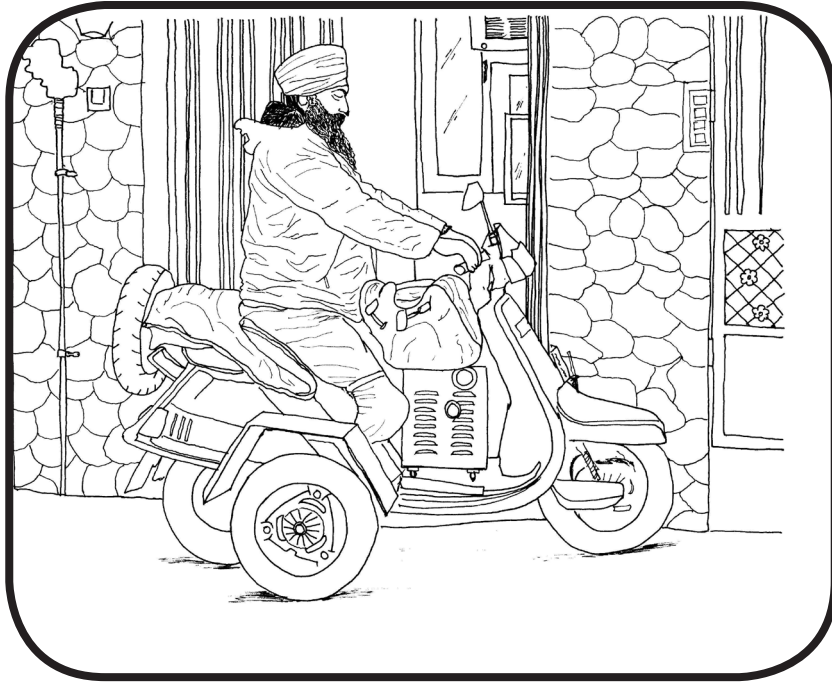


Figure 7-2 Gurcharan Singh using his scooter to move around the city

(Author, 2018)

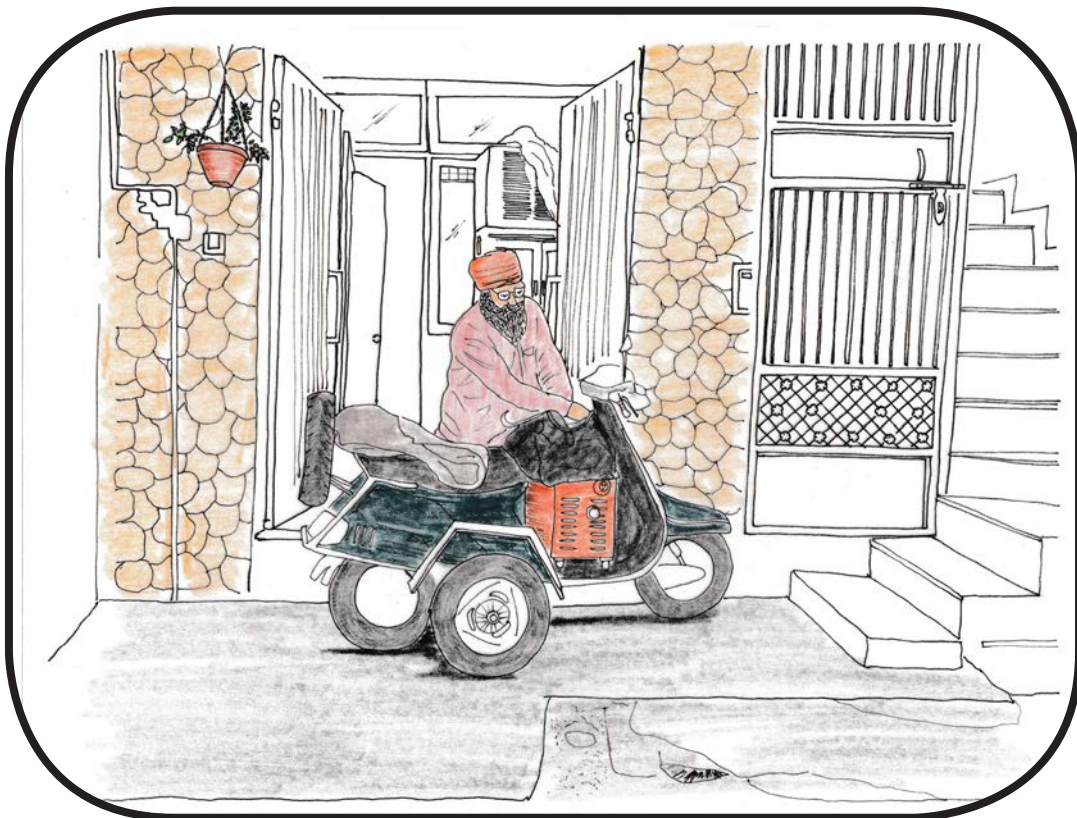


Figure 7-3 Gurcharan keeping all his tools on the scooter

(Author, 2018)

Gurcharan lives on ground floor and there is a cemented ramp outside the house, which helps him to park his scooter conveniently.

Whenever he receives a call for work, he prepares his scooter by keeping the tools and welding set on it. The author followed him to one of the workshops nearby his house.



Figure 7-4 Gurcharan entering the workshop

(Author, 2018)

Entrance to the workshop was marked by a levelled ground, which was accessible for driving the scooter inside.

Entrance to the building office was inaccessible. It was marked by seven steps with no handrails on both the sides (Fig 7-5 and 7-6).





Figure 7-5 Gurcharan climbing up the stairs

(Author, 2018)



Figure 7-6 Gurcharan climbing down the stairs

(Author, 2018)



Figure 7-7 Gurcharan waiting for supervisors to deliver a job briefing

(Author, 2018)

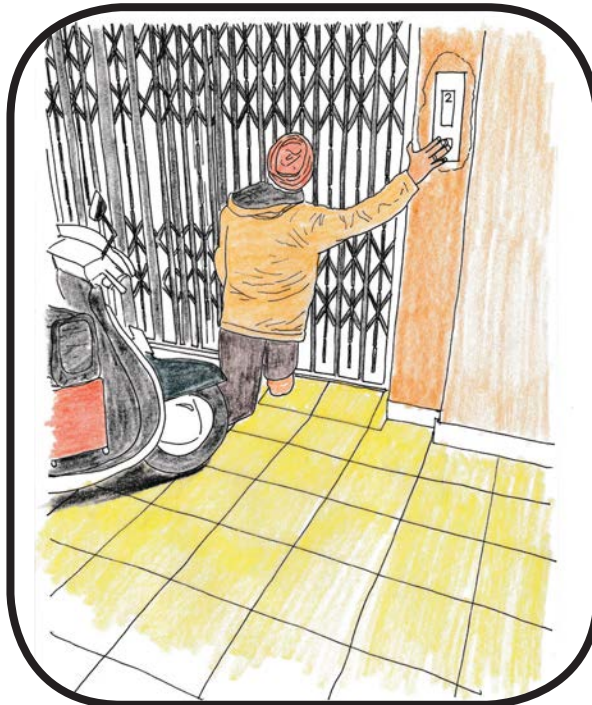


Figure 7-8 Gurcharan using the car lift to go to G-3 floor

(Author, 2018)

He was offered to sit while waiting for the supervisors to deliver a job briefing about the details of the car and the job. There were two car lifts. He was allowed to use the car lift to go to the G-3 floor level.





Figure 7-9 Gurcharan using the car lift to go to G-3 floor

(Author, 2018)



Figure 7-10 Gurcharan working on the car

(Author, 2018)

Upon reaching the floor, he began the work. He was provided a helper to assist him with the work.

Jai Prakash is 57 years old. He lives in Sudhershnan Park neighborhood in New Delhi, India. He is an architect and has been working for 29 years now. He works in Delhi and outside Delhi and is involved in building designs.

At the age of 53, because of diabetes and high blood pressure, he suffered through a major paralytic attack and a blood clot in the brain. Due to paralytic attack his left side body is highly affected. From then, he uses a walking tetrapod stick to balance his body.

He lives in Sudharshan park neighborhood, Delhi. It is predominantly a residential neighborhood with very few pockets of parks and small commercial activities running on ground floor. There are certain streets that are predominantly mixed use streets.



Figure 7-11 Jai Prakash

(Author, 2018)





Figure 7-12 Jai Prakash's house

(Author, 2018)

Jai Prakash lives in a four story house. His bedroom is on the second floor.

There is a staircase and no lift in the house. He uses the staircase to climb up and down the stairs. Entrance to the house is marked by three unequal steps.

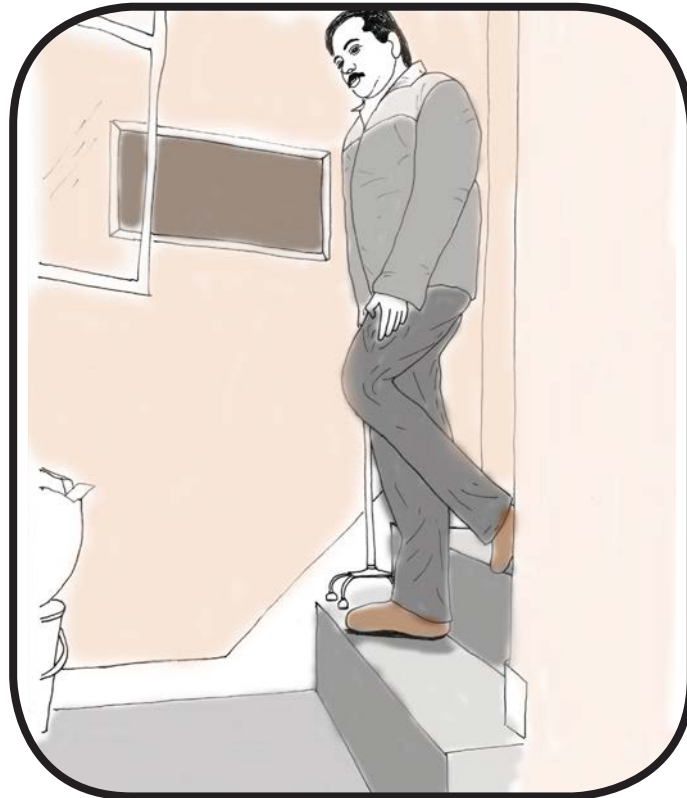


Figure 7-13 Jai Prakash climbing down the stairs

(Author, 2018)



Figure 7-14 Jai Prakash climbing down the stairs using his tetrapod stick

(Author, 2018)



Figure 7-15 Jai Prakash climbing down the steps using his tetrapod stick

(Author, 2018)



Figure 7-16 Jai Prakash walking to his site

(Author, 2018)

He is currently working on a site, which is in his neighborhood and near to his residence. He walks to the site every day. His house is along a wide road and a drain, which is now covered with concrete slabs. There are no sidewalks and area for sidewalks is encroached by car and two-wheeler parking that makes a person to walk on carriageway.

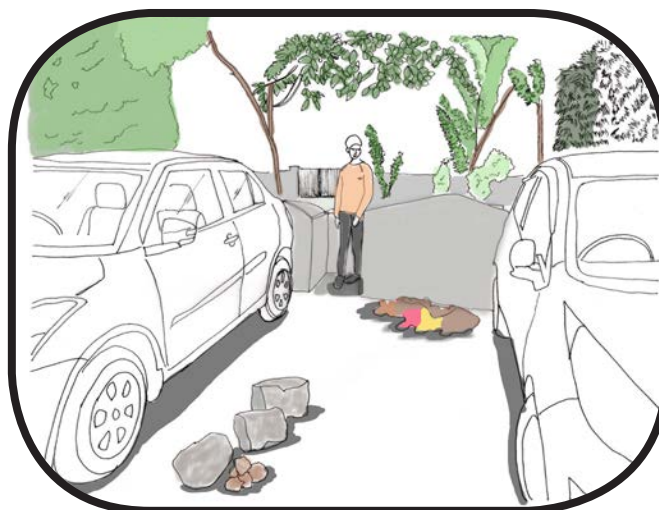


Figure 7-17 A park near Jai Prakash's house

(Author, 2018)

There is a park in front of the house, which is marked by a narrow gate and is encroached by car parking, trash and rocks. Jai Prakash finds it difficult to



enter the gate while passing through the encroachments.



Figure 7-18 Jai Prakash crossing the road to reach to the site

(Author, 2018)

While he walks to the site, the distance poses risks of getting injured by the traffic. There are no sidewalks or designated pedestrian walkways to cross the road.

This is the site (Fig 7-19) where he inspects and monitor the work. He either stands on the carriageway or wait inside for the labor to finish work. There's always some vehicle passing through that road.





Figure 7-19 Jai Prakash working on the site

(Author, 2018)

Mathura Bai is 41 years old. She lives in Laxmi Nagar neighborhood in New Delhi, India. She got married when she was 13 years of age. Currently, she is an entrepreneur, a hawker and an activist. She runs a small business of garments in Janpath market of Central Delhi. She calls Janpath as her neighborhood because she spends most of her time selling clothes in the market, and meeting with people for leisure and other works.

At the age of 13, she lost her right foot in an explosion. After her accident her in-laws didn't accept her disability. Later, her husband left her and married another woman. Her family's attitude was negative towards her disability condition.

In 1994, she came to Delhi as a single mother of one girl and another child was expected. She came to visit an orphanage for help, but because of some reasons she didn't live there. She started washing cars to earn some money. Then she sold her jewelry to begin a small business of peanuts and bananas.

Later, she started with garments business and she is also a Convener at National Hawker Federation. She has raised four children on her own.



Figure 7-20 Mathura Bai

(Author, 2018)

Madhu is 40 years old. She lives on rent in a neighborhood along Minto Road, New Delhi, India. She is also an entrepreneur and a hawker. She runs a small business of selling jackets at Janpath market of central Delhi. At the age of 10, she lost her left leg in an accident.



Figure 7-21 Madhu

(Author, 2018)

Mathura Bai and Madhu both are hawkers and run their business on the footpaths of Janpath market area. They both consider Janpath market as their neighborhood because they spend 12 hours of a day in the market area and with market people.

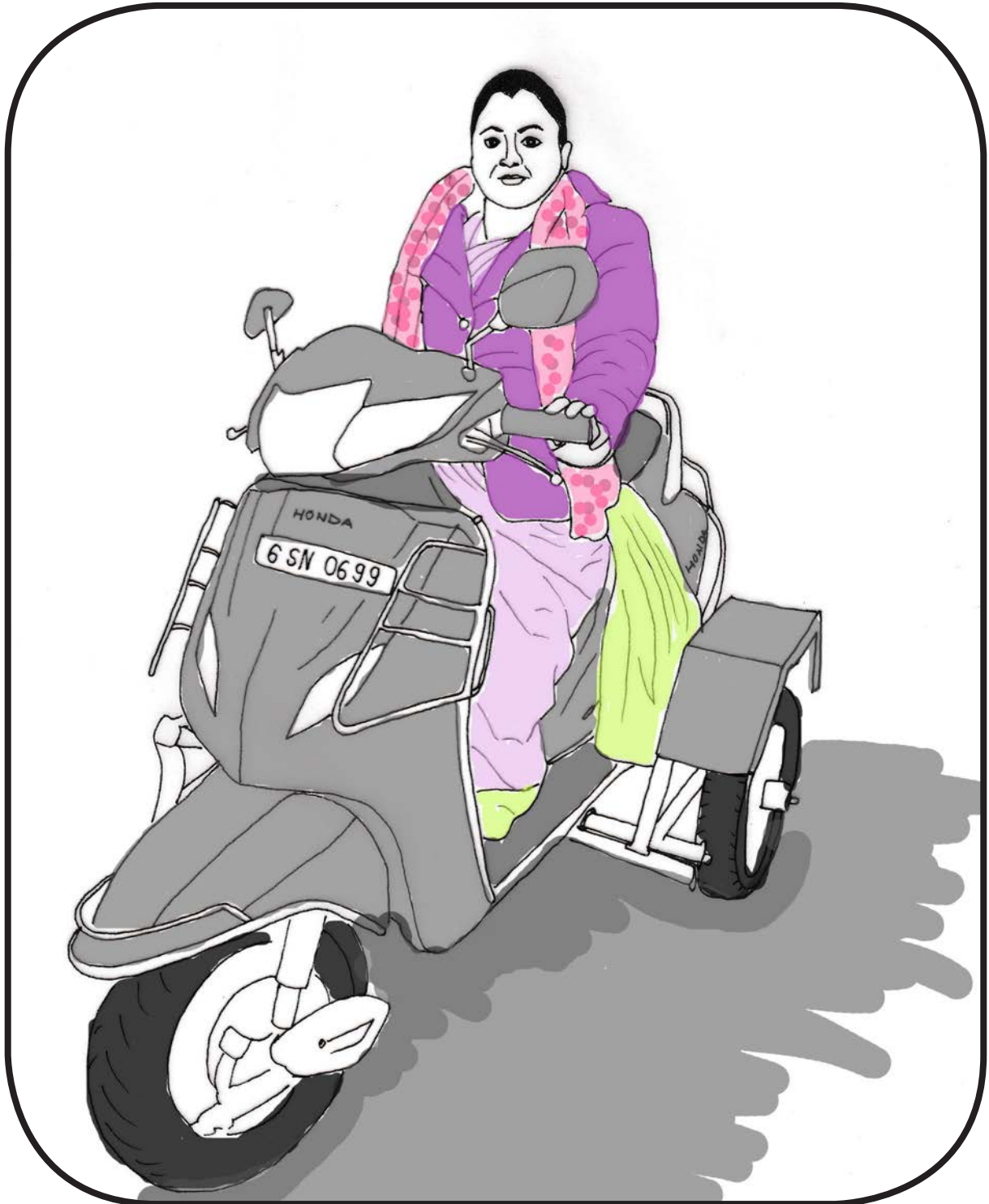


Figure 7-22 Madhu using a four wheeled scooter for moving

(Author, 2018)



Mathura Bai and Madhu, both ride a modified scooter every day to commute from their residences to the market and to commute to other places. They call their modified scooters as their legs. When they are not using the scooters, Mathura Bai uses her prosthetic right foot and Madhu uses a crutch to balance their bodies and walk around.

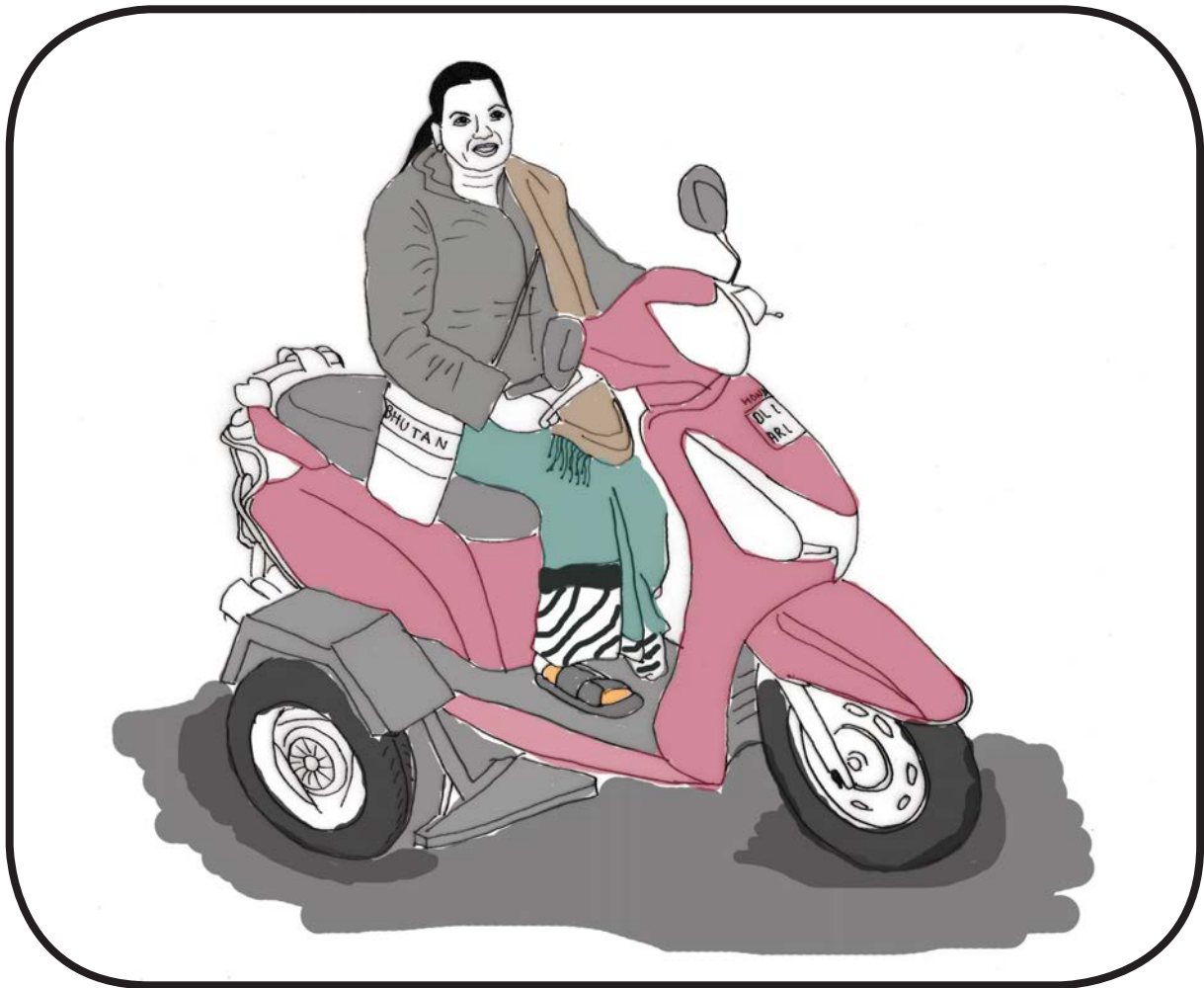


Figure 7-23 Mathura Bai with her modified scooter

(Author, 2018)



Figure 7-24 Madhu using her crutch to cross the road

(Author, 2018)

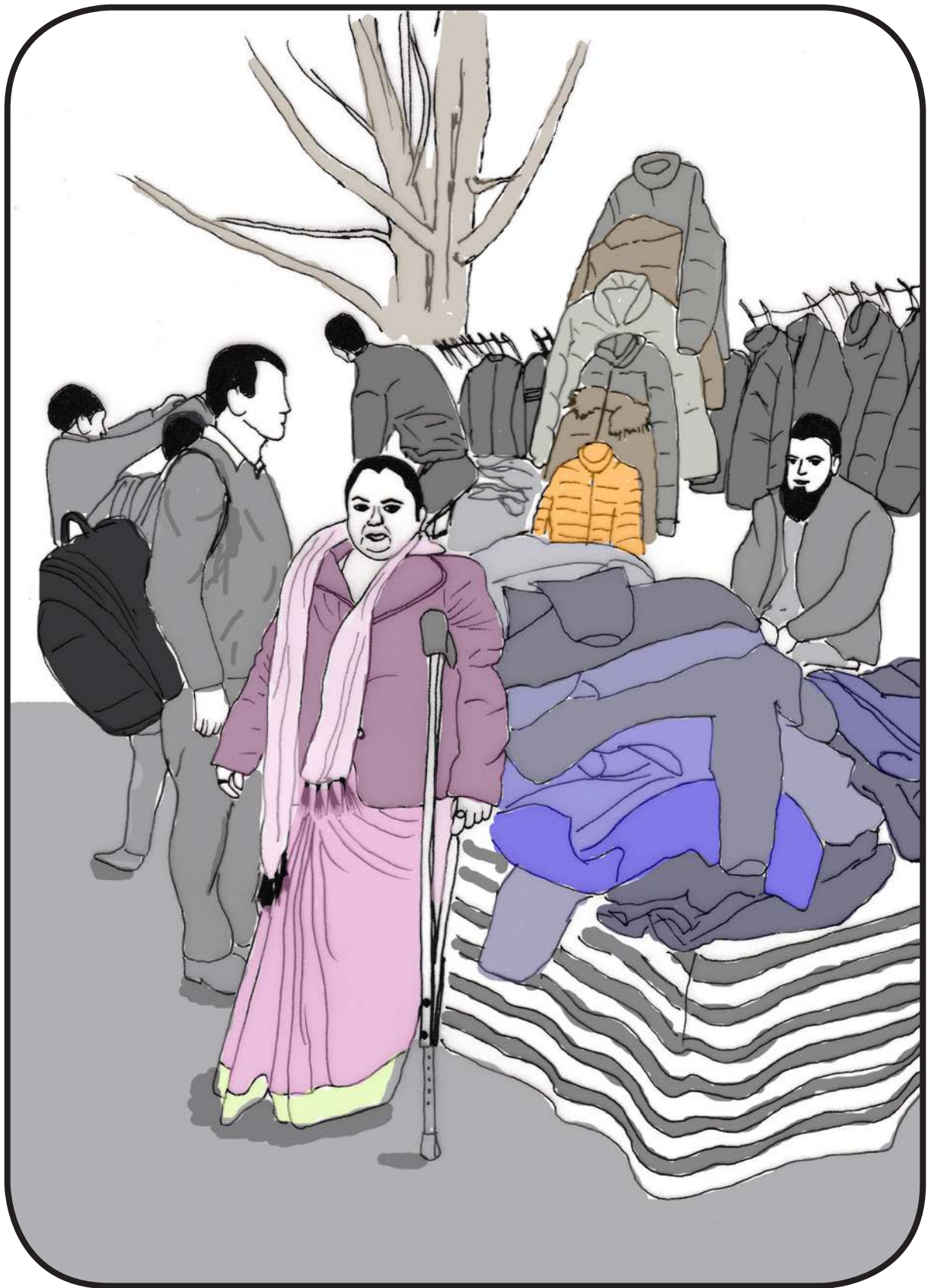


Figure 7-25 Madhu standing in front of her clothing stall

(Author, 2018)





Figure 7-26 Mathura Bai standing in front of her clothing stall

(Author, 2018)

Madhu and Mathura Bai, both run their small businesses in Janpath. They have one-two helper men who help them in selling the clothes and jackets. To run their business, they have to struggle with police and NDMC (New Delhi Municipal Council) people. The lack of accessible toilets for women is an issue in the market. Also, there's no accessible parking in the market because of which they park in the LIC building's parking lot.

Nanda Kishore is 40 years old and lives in Karkardooma neighborhood, Delhi. He was detected with polio at the age of four. His mother brought him to Amar Jyoti and at that time he used a trolley to commute to different places. When he was in 9th standard he started working and training in watch repairing. In 1997 the director of Amar Jyoti called him for a job and ever since he has been working in Amar Jyoti. He works in the field of marketing, screen printing among others.



Figure 7-27 Nanda Kishore

(Author, 2018)



Figure 7-28 Nanda Kishore walking on the ramp with handrails on both sides (Author, 2018)

Ramp with anti-skid flooring and levelled entrance to classrooms (Fig 7-28), makes it easier to work and walk around.





Figure 7-29 Levelled entrance to the classroom

(Author, 2018)

Anoop Singh Vaid is 40 years old and lives in Krishna Nagar neighborhood, Delhi. He suffered with polio when he was one year old due to injecting of wrong medicine by the doctor. In 1982, he was introduced to Amar Jyoti Charitable Trust and started learning jewelry design and Art and crafts. From then, he has been working in Amar Jyoti. He considers Amar Jyoti as his community where he spends eight hours a day. Provision of ramps with handrails on both sides makes it convenient for all mobility users to commute in the campus (Fig 7-29 and 7-30).

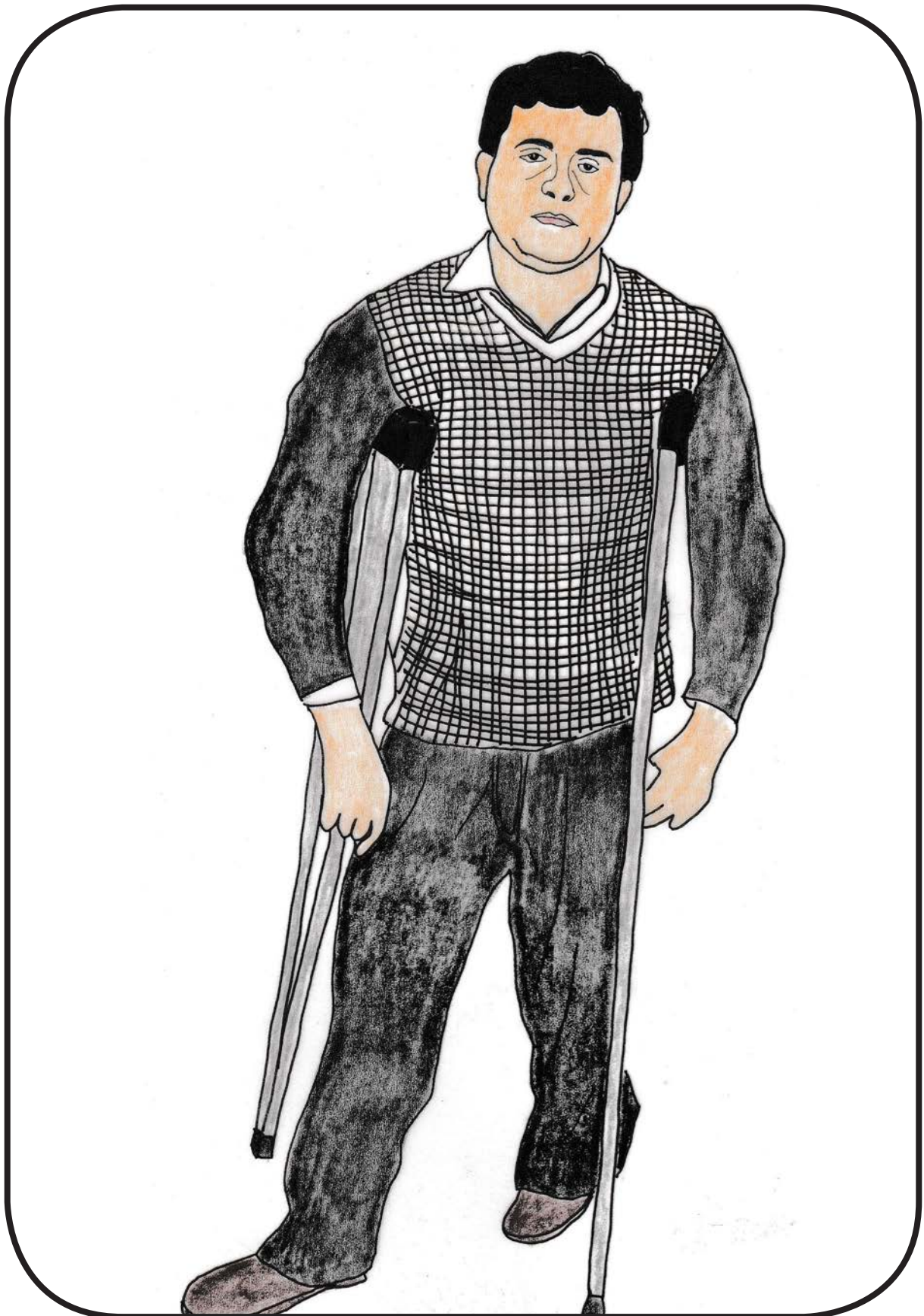


Figure 7-30 Anoop Singh Vaid

(Author, 2018)





Figure 7-31 Anoop Singh Vaid walking on the ramp with handrails and antiskid flooring (Author, 2018)

Suresh Jain is 68 years old (Fig 7-31) and lives in Ram Prastha. His right side of body is paralyzed due to high blood pressure on October 2016. Since then, he has been using a walking stick to balance his body and walk around. He comes to Amar Jyoti for his physiotherapy sessions. He finds the handrails on ramp and staircase very helpful. He uses staircase to climb down because the handrails are missing on one side of the ramp.





Figure 7-32 Suresh Jain

(Author, 2018)



Figure 7-33 Suresh Jain climbing down the stairs using the handrails

(Author, 2018)





Figure 7-34 Staircase with handrails and parapet wall

(Author, 2018)

Amarjeet is 52 years old and lives in Shahdra neighborhood, Delhi. He lives on third floor. He suffered with paralytic attack in 2016 and his left side of the body was highly affected. From then he uses a stick to balance his body and walk. Before this, he used to do driving for 12 years. Later, he came to know about physiotherapy in Amar Jyoti, which is helping him greatly.



Figure 7-35 Amarjeet

(Author, 2018)





Figure 7-36 Amarjeet using the ramp to reach down to ground floor

(Author, 2018)

He uses the ramp at Amar Jyoti to climb down the third floor. There are handrails on only one side of the ramp, which limits some people with disabilities to use it.



Raj Rani is 80 years old. She has high blood pressure and also suffers with diabetes. 12 years ago, she fell from the staircase and broke her left leg. Due to the fracture, she couldn't move with her left leg. She has used several mobility aids like wheelchair, stick and currently she uses a walker to move and balance her body.

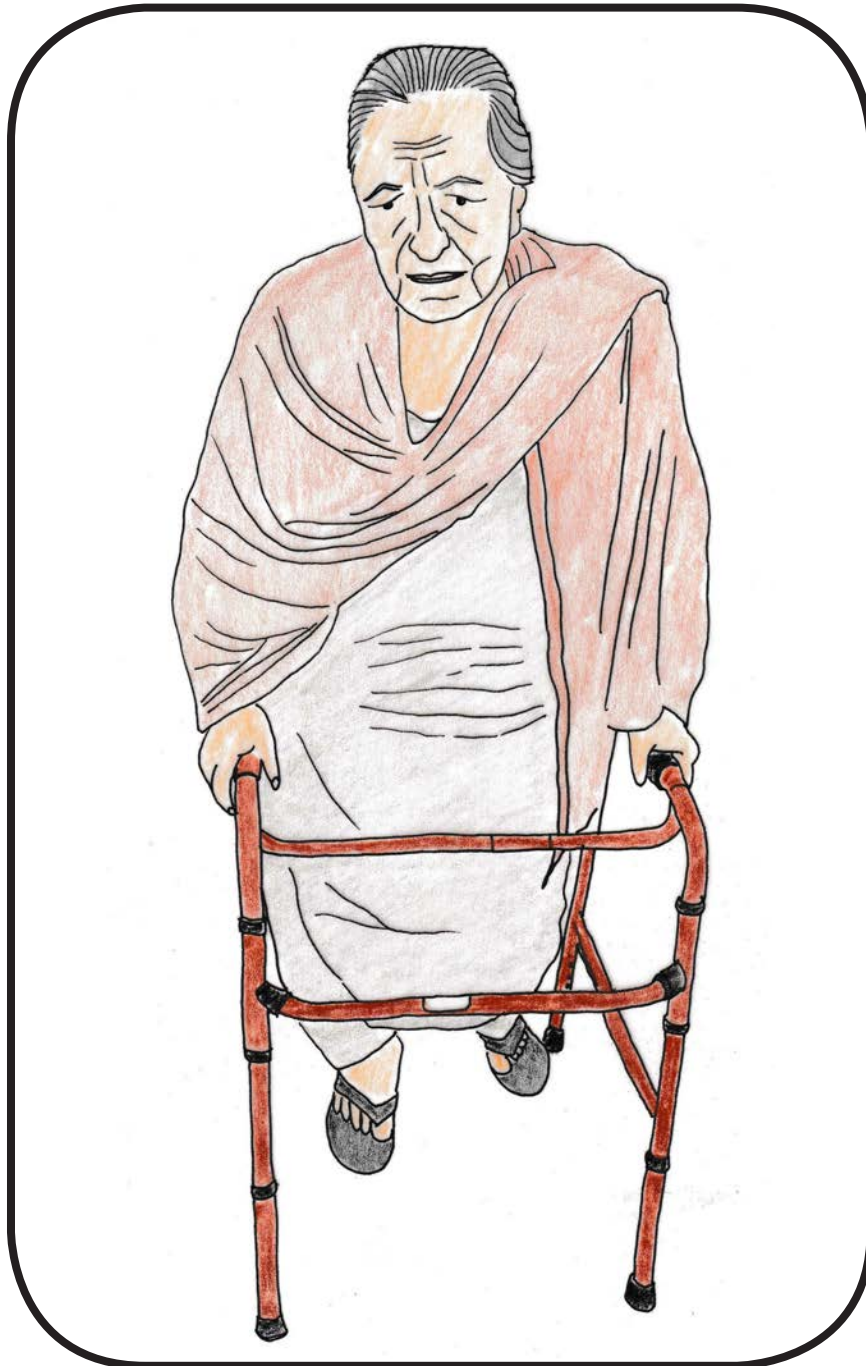


Figure 7-37 Raj Rani using a walker to balance her body and move

(Author, 2018)

Anjlee Agarwal is 49 years old. She suffers from Muscular Dystrophy limb girdle type, in which currently, her lower body cannot move. It is a hereditary disease and it became prominent in her teenage. She is the director of Samarthyam-National Center for Accessible Environments and leads various conferences and meetings.



Figure 7-38 Anjlee Agarwal using a wheelchair for mobility purpose

(Author, 2018)



Figure 7-39 Anjlee Agarwal using the carriageway because of lack of sidewalk

(Author, 2018)

Author followed her on her access audit of a government institution, where it was found that there were no sidewalks for walking and all the people had to walk on the carriageway.

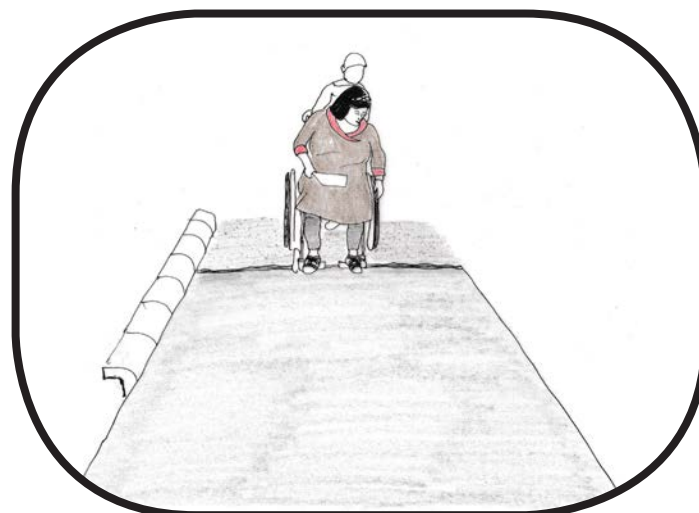


Figure 7-40 Anjlee Agarwal s struggling to get on the ramp due to level difference

(Author, 2018)





Figure 7-41 Anjee Agarwal's wheelchair was stuck in the gravel just before the ramp (Author, 2018)

## Chapter 8

### Conclusion

#### 8.1 Data on disability

As Addlakha states:

It is ironic that while India probably has the largest number of persons with disabilities in the world after China, if total population size is taken as a reliable indicator, accurate demographic data on disability is not available. According to Census of India 2001, 1.8 to 2.1 percent of the population suffers from some form of disability, which in absolute numbers come to approximately 18.49 to 21.9 million persons. The 2001 Census only took account of five loosely defined disabling conditions, namely, problems of seeing, hearing, speech, movement and mental conditions-i.e. mental retardation and mental illness. Using a wider definition of disability, which includes conditions like diabetes and cardiovascular disease, the WHO estimates that 6-10 % of the population suffers from identifiable physical or mental disability. That comes to over 90 million persons in India (Addlakha, ed., 2013).

Due to paucity of data on disabilities, it gets difficult to analyze the current situation of persons with disabilities in India. If the estimates of WHO is considered, then there's a huge part of the population that awaits actions for the betterment of persons with disabilities in the country. Data on disability provides basis for the policies to include persons with disabilities in the action plan to achieve equal rights of living and participation of all in daily activities. Despite progress made, the paucity of data on disability as well as a wide variance of definitions, standards and methodologies used to identify the conditions of persons with and without disabilities remain an obstacle to the effective formulation of disability-inclusive policies and programs as well as in the monitoring and evaluation of progress in MDGs (UN, 2010).



## **8.2 Socio-political model of disability that impacts the lives of persons with impairments**

A socio-political model of disability is an expression of the behaviors, attitudes and barriers that cause disabling conditions in society. This model explains that attitudes, economic, legal and policy barriers are the real reasons that people with disabilities have difficulties participating as full members of society ("A Socio-political Model of Disability," 2006). According to persons with ambulatory disabilities who were interviewed in this project, their bodily features were less contributing to the process of disablement but other physical, social, economic and legal causes have a greater impact in the process. Disability is a socio-politically defined and contested identity (or identities) and, following Laws, it seems clear that the built environment is implicated in socially producing and reproducing the identities which surround it (Imrie, 1996).

Disablement, as understood in this project, is a socio-political process rather than an impairment condition. Disablement, as a process, can be explained through the stories of persons interviewed in the project; beginning with conditions like accidents and diseases, disability continues. Disability in finding financial security, getting rid of poverty, being able to access different places and information, and to deal with attitudinal and physical barriers, continues. It is concluded that the same factors could limit or support respondents' participation in the community. These factors, as also discussed above are mainly the various environmental factors, which can be elaborated as:

- Physical- accessible and inaccessible infrastructure like, roads, community spaces (parks), post office, community centers; commercial places like markets, banks, etc.
- Social- positive and negative attitude of family, neighbors and people in public/private spaces; social/community security
- Economic-poverty and jobs, financial security, and
- Political- legal causes like policies/schemes that can reach and are for persons with ambulatory disabilities

The project shows that having financial security empowers persons with ambulatory disabilities (PwADs) and thus supporting their participation in the community. For example, Gurcharan, Anjee, Jai, Mathura and Madhu were having some means of earning, which catalyzes the process of empowerment and community participation. Acceptance of their disability conditions in their community and workspace becomes much more undemanding. Whereas, not being able to get a job because of different visible/invisible barriers, catalyzes the process of disablement. For example, in case of Amarjeet who lost his job because of paralysis and lack of accessible means and was dependent on others for financial support.

### **8.3 Disability and urban environment are related**

In this study, various areas were studied but two communities were discussed in detail. Ramesh Nagar area is predominantly a residential area, however, there are certain mixed use and commercial streets.

Similarly, Mansarovar Garden neighborhood is predominantly a residential area with several pockets of commercial, industrial and mixed-use activities. Both the communities lack sidewalks on most of the streets, which make pedestrians to walk on carriageway and public spaces like parks, community centers, post office among others are inaccessible to persons with ambulatory disabilities. This inaccessibility leads to sadness among community residents with ambulatory disabilities, who have not used the spaces for over a decade or even three decades.

Planning of urban areas and neighborhoods need an understanding of the diverse users and them using the spaces. For example, the different mobility aids used by the participants explain about the diverse ways in which spaces are accessed by people. Some of the mobility aids used are mentioned as wheelchair, walker, crutches, calipers, tri-cycle and prosthetic limbs (foot/leg). Planning of accessible road cross-sections, sidewalks, access to various public buildings/spaces, and public transportation system was considered of significance in the interviews and covered in the stories. When observed, it was found that lack of accessible toilets is another issue for persons with ambulatory disabilities. This explains that how disability and urban environment is related.

#### **8.4 Accessibility is the convenience of approaching spaces, information and social interaction**

Accessibility, as observed in this ethnographic research is the

the convenience of approaching spaces and information. It's an approachability to social interaction and ease of use of spaces. For example, in Gurcharan's case his work environment was made partially accessible that helped him to work and be independent while being inter-dependent. Also, having modified scooters in case of Gurcharan, Mathura, Madhu, Nanda, and Anoop, helped them in accessing different spaces through road without being dependent on others.

In case of Raj, accessibility to spaces is an issue as the spaces are not planned to be levelled. She has not accessed her neighborhood park and other public spaces for over two decades. Accessibility is crucial to everyone as it provides user-friendliness to different spaces when accessed by diverse users. Accessing the spaces leads to utilization of space, which is not possible for everyone if it is not planned to be accessible.

### **8.5 Barrier free environment**

While studying the two communities, physical barriers were observed. For example, the unmaintained sidewalks, encroachment on sidewalks by two and three-wheeler parking, wrong placement of street light poles and advertisement poles on the sidewalk, locked accessible entrance to the parks, blocking of entrance gates to the park by vehicles, unlevelled surfaces and lack of ramps and handrails on almost every public space (including parks). It was found that streets that were lacking sidewalks were used by multiple users for various purposes. Some of the purposes were sitting,

talking to friends, waiting, standing outside the house, using the street for placing advertisements boards, selling vegetables and fruits, etc. Also, lack of sidewalks makes pedestrian to walk on carriageway, which is dangerous as the road is used by trucks, cars and two wheelers.

Physical barriers mentioned above disables not only persons with disabilities but everyone to move about safely and freely and to use the facilities within the built environment. Thus, it is of utmost importance to have barrier free environment to provide an environment that supports the independent and safe functioning of individuals. Having maintained sidewalks, levelled surface and unblocked and not encroached entrances could add to barrier free planning of spaces.

## **8.6 Communities and cohesion**

Communities studied in this project such as, Ramesh Nagar, Mansarovar Garden, Karkarduma, Laxmi Nagar, Janpath, Sudhershana Park among others, were found to have some level of cohesion. These communities are still maintaining the traditional ties of community (shared space, close kinship links, shared religious and moral values) that are not replaced by anonymity, individualism and competition. However, the communities displayed conflict, social inequality in terms of physical environment, low levels of social interaction between and within communities due to inaccessible environments and low levels of place attachment.



## **8.7 Disability Inclusion**

As discussed in literature review, the two communities (Ramesh Nagar and Mansarovar Garden) lack disability inclusion. Disability inclusion is about including persons with (ambulatory) disabilities in everyday activities and encouraging them to have roles similar to their peers who do not have a disability. Although, the work communities are seen as trying to contribute to disability inclusion. For instance, in case of Anjee, Gurcharan, Nanda and Anoop, their work communities are trying to provide a disability inclusive environment, which leads to increased participation as being a worker. However, socially expected activities including engaging in social activities, using public resources such as community centers, transportation, parks, moving about within communities and enjoying other day-to-day activities are missing in both of the communities studied.

## **8.8 Coexistence and reconciliation**

As discussed in chapter 7, coexistence is about cohabitation and collaboration, whereas reconciliation is about harmonization and understanding. The chapter discusses about how persons with ambulatory disabilities coexist with the members of community and collaborate with other communities for work and social activities. Reconciliation is explained as harmonical acceptance that acknowledges suffering, injustice and shared security and wellbeing in a community.

All of the participants shared their experiences about how they deal with everyday situations in their different communities and what are the different challenges that they face in doing so. Some of the challenges in terms of barriers are discussed above, however, attitudinal barriers are not explained in detail.

Attitudinal barriers are the invisible barriers that could be cultural, emotional, communicational, political, religious, or social. Respondents described the negative attitude of family and other members of the community as a major issue. Lack of understanding/awareness of disability needs as well as inadequate accessible infrastructure leads to such negative attitude. Neither policies and schemes introduced by government reach persons with ambulatory disability nor does the local institutions help them in accessing those policies. It was stated by one of the participants that only two percent of government policies are inclusive of persons with disabilities, which is extremely low percentage as compared to the population. The marginalization of disabled people from the workplace often has little to do with their impairments but is more likely to be related to an inaccessible built environment (Imrie, 1996).

In nutshell, inclusive environment with accessible infrastructure helps raising awareness regarding disability needs, thereby, contributing in positive attitude. Physical and attitudinal barriers could be mitigated if worked in collaborative planning practices.

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## Appendix 1

Types of buildings to adopt barrier free guidelines as notified by the State Government in Model Building Bye-Laws (2016) are as follows:

- Buildings to be designed for ambulant disabled people- higher secondary school, conference hall, dance halls, youth centers, youth clubs, sport centers, sport pavilions, boat club houses, ice rinks, bowling centers, swimming pools, police stations, law courts, courts houses, sport stadiums, theaters, concert halls, cinemas, auditoria, small offices (the maximum plinth area 1400 sq.mt) snack bars, cafes and banqueting rooms (for capacity above 50 diners).
- Buildings to be designed for non-ambulant disabled people- schools for differently abled and other buildings as mentioned in sec 16, chapter 1 and along with botanical gardens, religious buildings, elderly people clubs, village halls, day centers, junior training centers, post offices, banks, dispensaries, railway stations, shops, super markets, and departmental stores. Large wheel chair criteria shall be applicable on ground floors of the following building, post offices, banks, dispensaries, railway station, shops, supermarkets, and departmental stores.
- Buildings to be designed for non-ambulant people (using small wheel chairs)- public lavatories in tourist sports, clubs motels, professional and scientific institution, museum, art galleries, public libraries, laborites, universities, college for further education, teachers training colleges, technical college, exhibition halls dentist surgeries, administrative department of the hospitals, service stations, car parking, buildings airports terminals, bus terminals, factories employing differently-abled for sedentary works, large offices, (with plinth area abode 1400 sq.mt.), tax offices, passport offices, pension offices, and labor offices, cafes, banqueting rooms and snack bars (for capacity above 100 dinners).

- Site development- level of the roads, access paths and parking areas shall be described in the plan along with specification of the materials.
  - o Access path from plot entry and surface parking to building entrance shall be minimum of 1800 mm wide having even surface without any steps. Slope, if any, shall not have gradient greater than 5%. Selection of floor material shall be made suitably to attract or to guide visually impaired persons (limited to colored floor material whose color and brightness is conspicuously different from that of the surrounding floor material or the material that emits different sound to guide visually impaired persons; hereinafter referred to as "guiding floor material". Finishes shall have a non-slip surface with a texture traversable by a wheel chair. Kerb wherever provided should blend to a common level.
  - o For parking of vehicles of differently-abled people, the following provisions shall apply: a) Surface parking for two car spaces shall be provided near entrance for the physically differently-abled persons with maximum travel distance of 30.0 m. from building entrance. b) The width of parking bay shall be minimum 3.6 meter. c) The information stating that the space is reserved for wheel chair users shall be conspicuously displayed. d) Guiding floor materials shall be provided or a device, which guides visually impaired persons with audible signals, or other devices, which serves the same purpose, shall be provided.
- Approach to plinth level- every building should have at least one entrance accessible to the differently abled and shall be indicated by proper signage. This entrance shall be approached through a ramp together with the stepped entry.



- o Ramped Approach: ramp shall be finished with non-slip material to enter the building. Minimum width of ramp shall be 1800mm with maximum gradient 1:12. Length of ramp shall not exceed 9.0 meter having 800mm high hand rail on both sides extending 300mm beyond top and bottom of the ramp. Minimum gap from the adjacent wall to the hand rail shall be 50mm
- o Stepped Approach: For stepped approach size of tread shall not be less than 300mm and maximum riser shall be 150mm. Provision of 800mm high hand rail on both sides of the stepped approach similar to the ramped approach.
- o Exit/Entrance Door: Minimum & clear opening of the entrance door shall be 900mm and it shall not be provided with a step that obstructs the passage of a wheel chair user. Threshold shall not be raised more than 12mm
- o Entrance Landing: Entrance landing shall be provided adjacent to ramp with the minimum dimension 1800mm x 2000mm. The entrance landing that adjoins the top end of a slope shall be provided with floor materials to attract the attention of visually impaired person's (limited to colored floor material whose color and brightness is conspicuously different from that of the surrounding floor material or the material that emits different sound to guide visually impaired persons. Finishes shall have a non-slip surface with a texture traversable by a wheel chair. Kerb wherever provided should blend to a common level.
- Corridor connecting the entrance/ exit for the differently abled- The corridor connecting the entrance / exit for differently abled leading directly outdoors to a place where information concerning the overall use of the specified building can be provided to visually impaired persons either by a person or by signs, shall be provided as follows:

- o Guiding floor materials' shall be provided or device that emits sound to guide visually impaired persons.
- o The minimum width shall be 1500mm
- o In case there is a difference of level, slope ways shall be provided with a slope of 1:12.
- o Handrails shall be provided for ramps/slope ways.
- Stair-ways- One of the stair-ways - near the entrance / exit for the differently abled shall have the following provisions:
  - o The minimum width shall be 1350 mm
  - o Height of the riser shall not be more than 150 mm and width of the tread 300mm. The steps shall not have abrupt (square) nosing
  - o Maximum number of risers on a flight shall be limited to 12
  - o Handrails shall be provided on both sides and shall extend 300 mm on the top and bottom of each flight of steps.
- Lifts- Wherever lift is required as per bye-laws, provision of at least one lift shall be made for the wheel chair user with the following cage dimensions of lift recommended for passenger lift of 13 person's capacity of NBC 2005, BIS. Section 4.9.3 Table no1- Desirable Lift size
  - o Clear internal width 1100 mm
  - o Clear internal depth 2000 mm
  - o Entrance door width 900 mm
  - o A hand rail not less than 600mm long at 1000mm above floor level shall be fixed adjacent to the control panel.
  - o The lift lobby shall be of an inside measurement of 1800 mm x 2000 mm or more.
  - o The time of an automatically closing door should be minimum 5 seconds and the closing speed should not exceed 0.25 m/ sec.

- o The interior of the cage shall be provided with a device that audibly indicates the floor, the cage has reached indicates that the door of the cage of entrance/exit is either open or closed
  - o Graphic/Braille signage, as per the Harmonized Guidelines, shall be provided in the lift lobby
- Toilets-One special W.C. in a set of toilets shall be provided for the use of differently abled with essential provision of washbasin near the entrance for the differently abled.
  - o The minimum size shall be 1500 mm x 1750 mm.
  - o Minimum clear opening of the door shall be 900mm and the door shall swing out.
  - o Suitable arrangement of vertical/horizontal handrails with 50mm clearance from wall shall be made in the toilet.
  - o The W.C. seat shall be 500mm from the floor
- Provision of W.Cs in buildings without lift-Provision of special W.C. shall be made on all floors for buildings designed for ambulant disabled persons. For buildings designed for non-ambulant disabled special W.C. shall be provided at Ground Floor. Size of W.C. shall depend on the type of wheel chair used by the disabled.
- Provisions of W.Cs in buildings with lift Provision of Special W.C. shall be made on all floors. Size will depend on the category of disabled for whom it has been provided.
- Toilet Details: For Toilets Designed for Ambulant Disabled
  - o The minimum size of W.C. shall be 1075 x 1650 mm with a minimum depth of 1450 mm from entry door 900 mm
  - o Long handrail on the side closer to W.C. with a clear width between the handrails shall be 900 mm and height of handrails shall be 800 mm from floor level.

- o Minimum size of the clear door opening shall be 780 mm
- For Toilets Designed for Non-Ambulant Disabled Small Wheel Chair- The minimum size of W.C. shall be 1350 x 1500 mm with a minimum depth of 1500 mm from entry door. 900 mm long handrail on the side closer to W.C. shall be provided. To provide movement space for wheel chair, W.C. seat shall be fixed towards one side to the opposite adjacent wall. The centerline of W.C. from the adjacent wall shall be 400 mm and minimum 950 mm from the other wall. Minimum size of the clear door opening shall be 780 mm
- For Toilets Designed for Non-Ambulant Disabled Using Large Wheel Chair- The minimum size of W.C. shall be 1500 X 1750 mm with a minimum depth of 1750 mm for entry door. 900 mm long handrail on the side wall closer to W.C. shall be provided. To provide movement space for wheel chair, W.C. seat shall be fixed towards one side of the opposite wall. The centerline of the W.C. from the adjacent wall shall be 400 mm and a minimum of 1100 mm from the other wall. Min. size of clear door opening shall be 860 mm.
- Designing for Children- In the buildings meant for the pre-dominant use of the children, it will be necessary to suitably alter the height of the handrail and other fittings & fixtures etc.
- Guiding / Warning Floor Material-The floor material to guide or to warn the visually impaired persons with a change of colour or material texture and easily distinguishable from the rest of the surrounding floor materials. The material with different texture gives audible signals with sensory warning when a person moves on this surface with walking stick. The guiding/warning floor material is meant to give the directional effect or warn a person at critical places. It should be provided in the following areas:
  - o The access path to the building and to the parking area

- o The landing lobby towards the information board, reception, lifts, staircases and toilets
- o Immediately at the beginning/end of walkway where there is a vehicular traffic
- o At the location abruptly changing in level or beginning/end of a ramp
- o Immediately in front of an entrance/exit and the landing
- Drinking Water- Suitable provision of drinking water shall be made for the differently abled near the special toilet provided for them
- Refuge- An alternative to immediate evacuation of a building via staircases and/ or lifts is the movement of disabled persons to areas of safety within a building. If possible, they could remain there until the fire is controlled and extinguished or until rescued by the fire fighters.
  - o It is useful to have the provisions of a refuge area, usually at the fire protected stair landing on each floor that can safely hold one or two wheelchairs
  - o Hand Doorways with clear opening width of 900 mm and regular compliance
  - o Have an alarm switch installed between 900 mm and 1200 mm from floor level
- Proper signage-
  - o Appropriate identification of specific facilities within a building for the differently abled persons should be done with proper signals.
  - o Visually impaired persons make use of other senses such as hearing and touch to compensate for the lack of vision, whereas visual signals benefit those with hearing disabilities. Signs should be designed and located so that they are easily legible by using suitable letter size (not less than 20 mm high)
  - o For visually impaired persons, information board in brail should



be installed on the wall at a suitable height and it should be possible to approach them closely.

- o To ensure safe walking, there should not be any protruding sign which creates obstruction in walking.
- o Public Address System may also be provided in busy public areas
- o The symbols/information should be in contrasting color and properly illuminated because people with limited vision may be able to differentiate amongst primary colors
- o International Symbol Mark for wheel chair be installed in a lift, toilet, staircase, parking areas, etc., that have been provided for the differently abled.

## Appendix 2

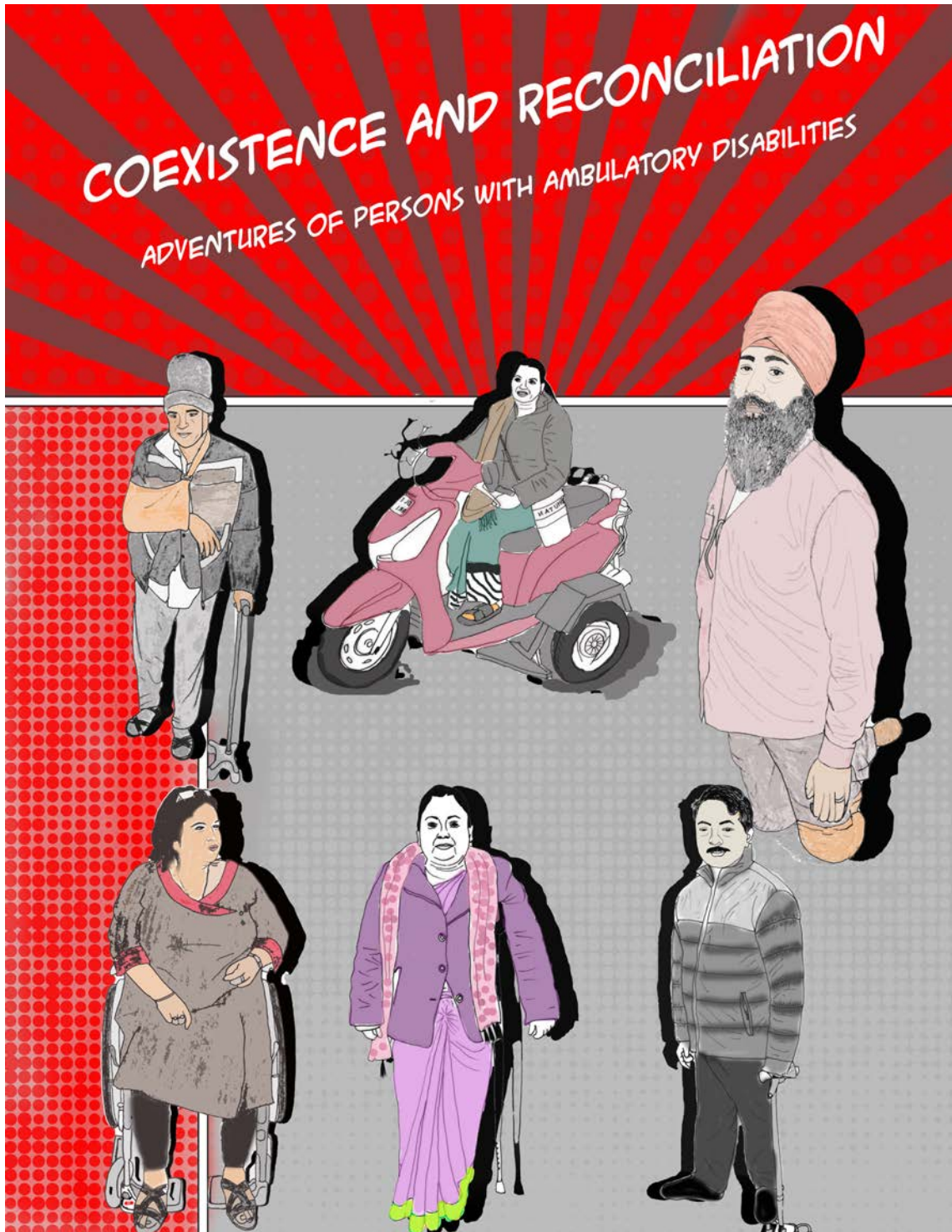
Master Plan for Delhi, (2021) provisions are as follows:

- Transportation-
  - o Provision for introducing cycle tracks, pedestrian and disabled friendly features in arterial and sub-arterial roads
  - o The multi-modal system will be integrated with safe facilities for pedestrians, bicyclists, disabled persons and Intelligent Transport System (ITS) enabled taxis and three-wheeled scooter rickshaws (TSR).
  - o All roads should be made pedestrian, disabled and bicycle friendly as far as possible.
  - o Street furniture and signage should be designed sensitively considering the land use, intensity of activity and other identified design districts. Their design must also reflect respect to pedestrians and physically challenged people
  - o Access provisions for the physically challenged should be made from the street to overcome curb heights, rain water gratings etc.
  - o Parking spaces close to the entrance should be reserved for physically challenged
  - o Continuity of the sidewalks should be maintained in terms of the width, surface treatment, curb cuts, tree and street furniture locations, for the pedestrians and disabled
- Barrier-free environment-
  - o In the planning and design of outdoor and indoor movement, people with disability, older persons and people in wheel chairs should be considered
  - o Paths and pavements shall be flat, uniform, slip-free and free from unnecessary obstacles.
  - o Orientation points and guide routes may be provided for visually disabled people

- o Information and warning signs must be understandable, clear and well lit.
- Night shelter-
  - o Special provisions should be made for the homeless, women and children including the disabled, orphans and old.
- Slum and JJ redevelopment regulations and guidelines-
  - o Schemes / designs should be compatible for disabled.
- Social Infrastructure
- Education-
  - o For 10 lakh population 1 School for Mentally challenged with plot area 0.2 ha should be provided
  - o School for Physically challenged 10.0 lakh 0.2 ha
  - o In case of schools for mentally / physically challenged:
    - 20% of maximum can be utilized for residential use of essential staff and student accommodation.
    - Ground Coverage= 50%, FAR=120, Height=18m
- Other Community Facilities-
  - o 1 Care Centre for Physically/Mentally Challenged per 10 lakh population with subject to availability of land up to 1000sqm plot area.

### Appendix 3

A comic book is a graphic presentation of sequential art taking place at different time intervals. The following comic displays the characters having ambulatory disabilities and how do they get along with their day-to-day routines.







JAI PRAKASH IS 57 YEARS OLD. HE LIVES IN SUDHARSHAN PARK NEIGHBORHOOD IN NEW DELHI, INDIA. HE IS AN ARCHITECT.

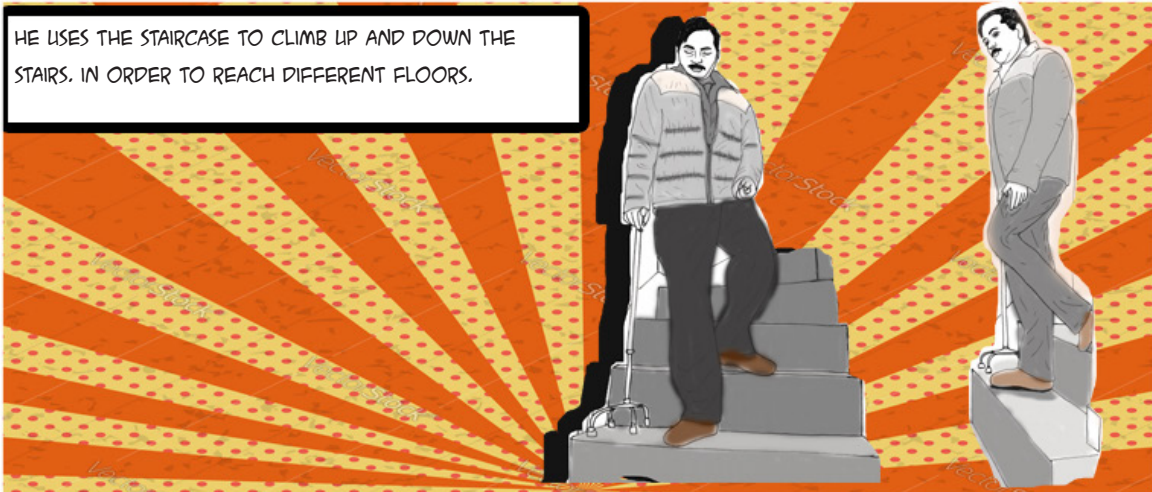
HE HAS BEEN WORKING FOR 29 YEARS NOW. HE WORKS IN DELHI AND OUTSIDE DELHI AND IS INVOLVED IN BUILDING DESIGNS.

AT THE AGE OF 53, HE SUFFERED THROUGH A MAJOR PARALYTIC ATTACK AND A BLOOD CLOT IN THE BRAIN.

DUE TO PARALYTIC ATTACK HIS LEFT SIDE BODY IS HIGHLY AFFECTED. FROM THEN, HE USES A WALKING TETRAPOD STICK TO BALANCE HIS BODY. HE LIVES IN SUDHARSHAN PARK NEIGHBORHOOD, DELHI. IT IS PREDOMINANTLY A RESIDENTIAL NEIGHBORHOOD WITH VERY FEW POCKETS OF PARKS AND SMALL COMMERCIAL ACTIVITIES RUNNING ON GROUND FLOOR. THERE ARE CERTAIN STREETS THAT ARE PREDOMINANTLY MIXED-USE STREETS. JAI PRAKASH LIVES IN A FOUR-STORY HOUSE. HIS BEDROOM IS ON THE SECOND FLOOR. THERE IS A STAIRCASE AND NO LIFT IN THE HOUSE



HE USES THE STAIRCASE TO CLIMB UP AND DOWN THE STAIRS. IN ORDER TO REACH DIFFERENT FLOORS.



HE IS CURRENTLY WORKING ON A SITE, WHICH IS IN HIS NEIGHBORHOOD AND NEAR TO HIS RESIDENCE. HE WALKS TO THE SITE EVERY DAY. HIS HOUSE IS ALONG A WIDE ROAD THERE ARE NO SIDEWALKS AND THAT MAKES A PERSON TO WALK ON CARRIAGEWAY.



THIS IS THE SITE WHERE HE INSPECTS AND MONITOR THE WORK.







**GURCHARAN SINGH!**



GURCHARAN SINGH IS  
50 YEARS OLD.

HE LIVES IN RAMESH  
NAGAR NEIGHBORHOOD  
IN NEW DELHI, INDIA.

HE IS SELF-EMPLOYED AND WORKS AS AN AUTOMOBILE TECHNICIAN IN VARIOUS WORKSHOPS IN AND AROUND DELHI. HE MET WITH AN ACCIDENT IN 1992 AND HAD TO GET BOTH OF HIS LEGS AMPUTATED.



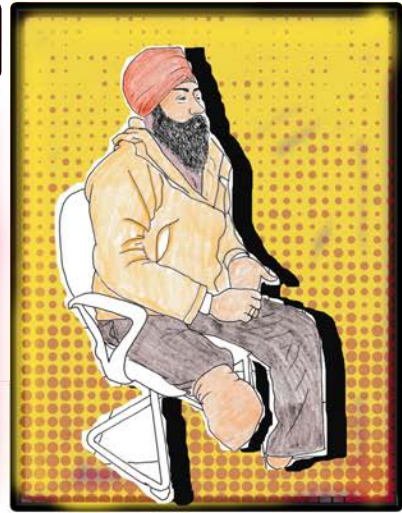
FROM THEN HE WALKS ON HIS KNEES AND USES A  
MODIFIED FOUR-WHEELED SCOOTER FOR MOVING

ENTRANCE TO THE BUILDING OFFICE WAS INACCESSIBLE.

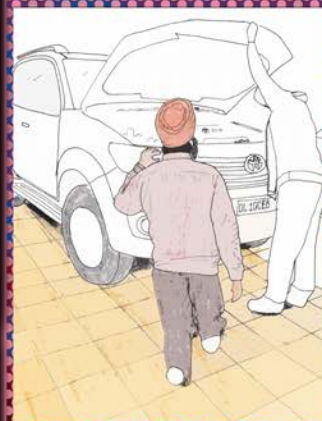




ENTRANCE TO WORKSHOP WAS MARKED BY A LEVELLED GROUND



HE WAS ALLOWED TO USE THE CAR LIFT TO GO TO THE 6-3 FLOOR LEVEL, WHERE THE CAR WAS PARKED. THERE WERE TWO CAR LIFTS OUT OF WHICH ONE WAS USED BY GURCHARAN TO TAKE HIS MODIFIED SCOOTER WITH HIM. HIS MODIFIED SCOOTER IS ALSO A MOBILE TO KEEP ALL HIS NECESSARY TOOLS FOR WORK.



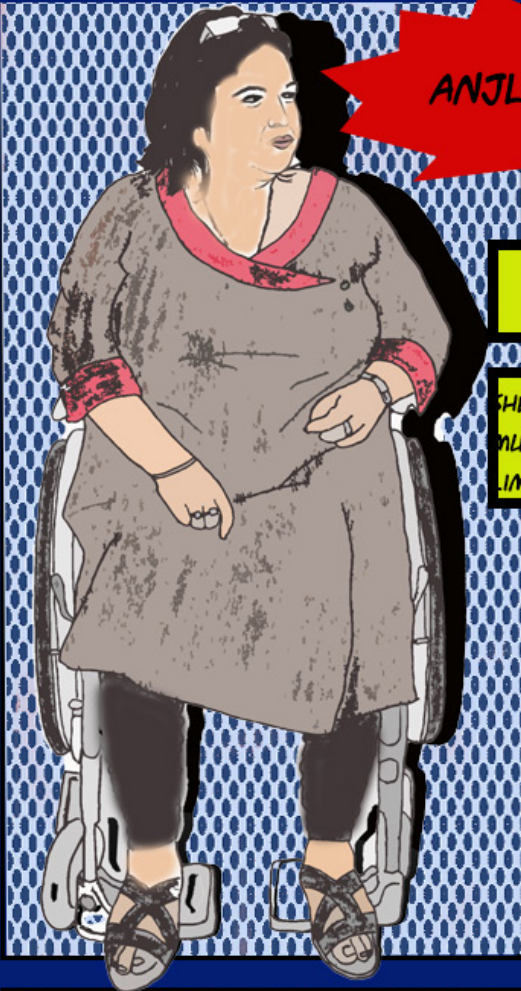
UPON REACHING THE FLOOR WHERE THE CAR (TO BE REPAIRED) WAS PARKED, HE BEGAN WORKING ON THE CAR. HE WAS PROVIDED WITH A HELPER TO ASSIST HIM WITH THE WORK.



## ANJLEE AGARWAL

ANJLEE AGARWAL IS  
49 YEARS OLD.

SHE SUFFERS FROM  
MUSCULAR DYSTROPHY  
LIMB GIRDLE TYPE



SHE IS THE DIRECTOR OF SAMARTHYAM-NATIONAL CENTER FOR ACCESSIBLE ENVIRONMENTS AND LEADS VARIOUS CONFERENCES AND MEETINGS. I FOLLOWED HER ON HER ACCESS AUDIT OF A GOVERNMENT INSTITUTION, WHERE WE FOUND NO SIDEWALKS FOR WALKING AND WE HAD TO WALK ON THE CARRIAGEWAY. ONE OF THE RAMP ACCESS WAS MARKED BY GRAVEL WHERE THE WHEELCHAIR WAS STUCK AND COULDN'T MOVE. THESE ARE THE EXAMPLES OF INACCESSIBLE ENVIRONMENTS. THE RAMP WAS MARKED WITH LEVEL DIFFERENCE, WHICH MADE IT DIFFICULT TO MANEUVER THE WHEELCHAIR.



MATHURA BAI IS 41 YEARS OLD. SHE LIVES IN LAXMI NAGAR NEIGHBORHOOD IN NEW DELHI, INDIA. SHE IS AN ENTREPRENEUR, A HAWKER AND AN ACTIVIST

SHE RUNS A SMALL BUSINESS OF GARMENTS IN THE JANPATH MARKET OF CENTRAL DELHI SHE CALLS JANPATH AS HER NEIGHBORHOOD

BECAUSE SHE SPENDS MOST OF HER TIME SELLING CLOTHES IN THE MARKET, AND MEETING WITH PEOPLE FOR LEISURE AND OTHER WORKS.



## HAWKER'S MARKET



MADHU IS 40 YEARS OLD. SHE LIVES ON RENT ON ALONG MINTO ROAD, NEW DELHI. SHE IS ALSO AN ENTREPRENEUR AND A HAWKER.

SHE RUNS A SMALL BUSINESS OF SELLING JACKETS AT JANPATH IN CENTRAL MARKET OF DELHI. AT THE AGE OF 10 SHE LOST HER LEFT LEG IN ACCIDENT. FROM THEN SHE USES A CRUTCH TO WALK AND BALANCE.



AMARJEET IS 52 YEARS OLD AND LIVES IN SHAHDRA NEIGHBORHOOD, DELHI. HE LIVES ON THIRD FLOOR. HE SUFFERED WITH PARALYTIC ATTACK IN 2016 AND HIS LEFT SIDE OF THE BODY WAS HIGHLY AFFECTED



SURESH JAIN IS 68 YEARS OLD AND LIVES IN RAM PRASTHA. HIS RIGHT SIDE OF THE BODY IS PARALYZED DUE TO HIGH BLOOD PRESSURE ON OCTOBER 2016. SINCE THEN, HE HAS BEEN USING A WALKING STICK TO BALANCE HIS BODY AND WALK AROUND.



FROM THEN HE USES A STICK TO BALANCE HIS BODY AND WALK. LATER, HE CAME TO KNOW ABOUT PHYSIOTHERAPY IN AMAR JYOTI, WHICH IS HELPING HIM.



HE COMES TO AMAR JYOTI FOR HIS PHYSIOTHERAPY SESSIONS. HE FINDS THE HANDRAILS ON RAMP AND STAIRCASE VERY HELPFUL.

HE USES THE STAIRCASE TO CLIMB DOWN BECAUSE THE HANDRAILS ARE MISSING ON ONE SIDE OF THE RAMP.



ANOOP SINGH VAID IS 40 YEARS OLD AND LIVES IN KRISHNA NAGAR NEIGHBORHOOD, DELHI. HE SUFFERED WITH POLIO.



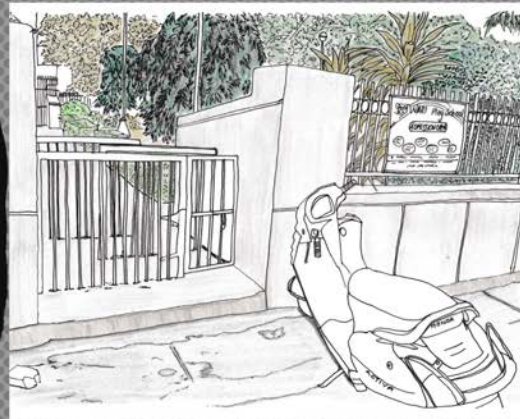
NANDA KISHORE IS 40 YEARS OLD AND LIVES IN KARKARDOOMA NEIGHBORHOOD, DELHI. HE WAS DETECTED WITH POLIO AT THE AGE OF FOUR, HIS MOTHER BROUGHT HIM TO AMAR JYOTI.



RAMP WITH ANTI-SKID FLOORING AND LEVELLED ENTRANCE TO CLASSROOMS, MAKES IT EASIER TO WORK AND WALK AROUND.



RAJ RANI



RAJ RANI IS 80 YEARS OLD. SHE HAS HIGH BLOOD PRESSURE AND ALSO SUFFERS WITH DIABETES. 12 YEARS AGO, SHE FELL FROM THE STAIRCASE AND BROKE HER LEFT LEG.

DUE TO THE FRACTURE, SHE COULDN'T MOVE WITH HER LEFT LEG. SHE HAS USED SEVERAL MOBILITY AIDS LIKE WHEELCHAIR, STICK, ETC.

CURRENTLY SHE USES A WALKER TO MOVE AND BALANCE HER BODY. DUE TO UNLEVELLED SURFACE AND WICKED GATES IN THE PARK, SHE HAS BEEN UNABLE TO ACCESS PARKS FOR OVER TWO DECADES

The comic book above, tells us the stories of different persons with ambulatory disabilities living in the neighborhoods of New Delhi, India. The comic shows the various ways in which different persons with ambulatory disability cope with their regular routine. Each person with disability have a unique physical setting in which she/he works and live their lives. For example, Gurcharan and Raj Rani lives in a neighborhood where there are parks and all other community facilities but they can't access those because of inaccessible infrastructure. However, Gurcharan is provided with a partially accessible environment in his workplace, because of which he is capable of working and earning. In case of Anoop and Nanda, they are provided with accessible infrastructure at their work place, which is, Amar Jyoti, and this helps them to be economically independent. The comic also shows the different barriers experienced by the characters with ambulatory disability, for example, Jai Prakash walking in the middle of the carriageway because of lack of sidewalks, is one of the cases. This is a graphic narration of stories to provide better and simpler understanding of situations that are dealt by the characters in the stories.